

MULTILINGUAL ACCESS TO THE DIGITAL EUROPEAN CULTURAL HERITAGE

Introduction to the multilingual diversity of Europe

Best practices for multilingual websites and thesauri

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Acknowledgements

From February 2004 10 new member states (plus Russia and Israel) have been participating in the joint European initiative of MINERVA Plus working with MINERVA to coordinate digitization efforts and activities. Since then Minerva Plus supplementary working groups (SWG) started operation and Hungary became the coordinator of SWG Multilingual thesauri. The issue of multilingualism is becoming more and more important in making the digital cultural heritage of Europe available. Language is one of the most significant barriers to access of websites and, because of this barrier, great parts of the European digital cultural heritage cannot be found on the Internet.

MINERVA Plus conducted a major survey to get an overview of the situation concerning language usage in cultural websites. The aim of the survey was to see to what extent cultural websites and portals are available for users of different language communities and also whether websites use more languages than the language they were originally created in. Furthermore the survey intended to find out if cultural websites are using retrieval tools such as controlled vocabularies or thesauri and whether multilingual tools are available for use.

The methodology used for our survey included a questionnaire completed on a voluntary basis by our target group: libraries, museums, archives and other cultural institutions operating websites. The selection of the websites was not scientifically founded and so the sampling is not statistically representative. Nevertheless, the survey yielded a general picture of multilingualism of cultural websites and the findings will be a good starting point for more systematic and statistically valid research in the future.

I would like to thank our Israeli colleagues for letting us use their questionnaire (*Registry of Controlled Vocabularies related to Jewish Cultural Heritage and Israel*) as basis for our survey.

I am also very grateful to our respondents for collecting and mailing the requested information.

Last but not least I would like to express my gratitude to the editorial board of this document.

Iván Rónai
NRG member for Hungary

"We dedicate this report to the memory of the late Stephen Conrad."

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1. Introduction

1.1 FOREWORD

“Immer werden jene vonnöten sein, die auf das Bindende zwischen den Völkern jenseits des Trennenden hindeuten und im Herzen der Menschheit den Gedanken eines kommenden Zeitalters höherer Humanität gläubig erneuern“

Stefan Zweig: Triumph und Tragik des Erasmus von Rotterdam

There will always be necessary those who look on the binding parts between peoples beyond the separating ones, reinvigorating, in the heart of mankind, the thought of a forthcoming century of superior humanity.

What is multilingualism? - The European context

"Multilingualism refers to both a person's ability to use several languages and the co-existence of different language communities in one geographical area."¹ In fact, the more languages you know, the more of a person you are (Koľko jazykov vieš, toľkokrát si človekom), says the Slovak proverb that opens the Commission's communication on multilingualism.

The European Commission adopted in November 2005 the communication to the Council "New Framework Strategy for Multilingualism" document², which underlines the importance of multilingualism and introduces the European Commission's multilingualism policy.

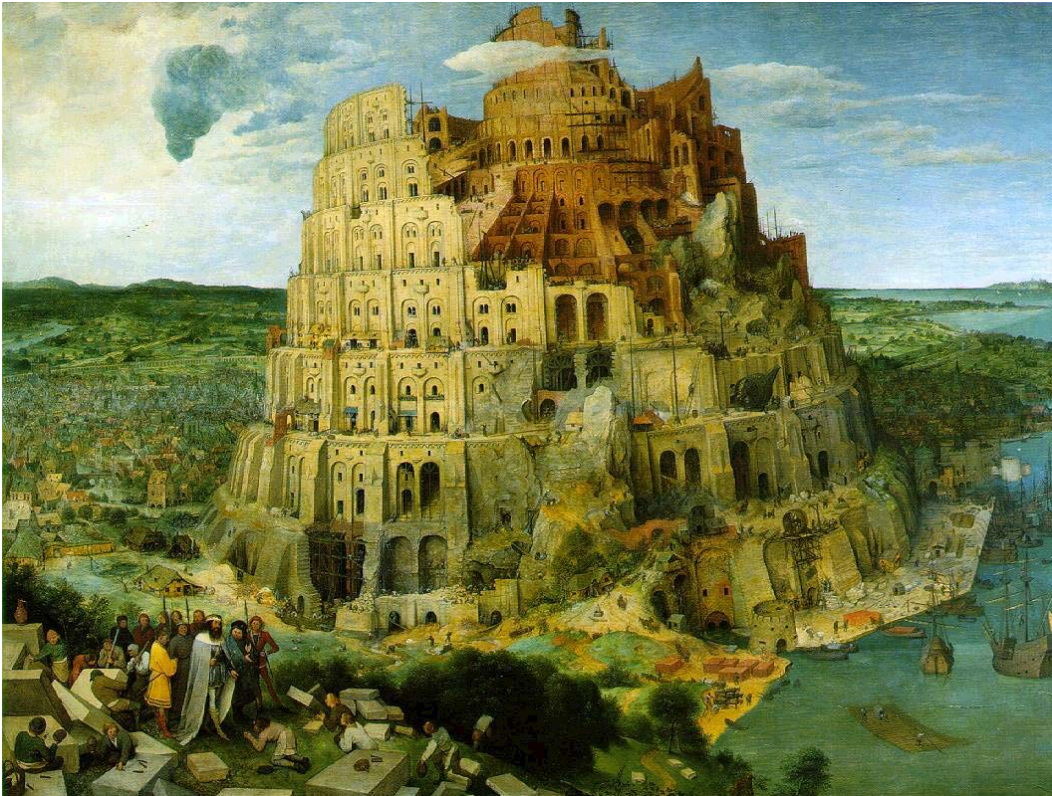
"The Commission's multilingualism policy has three aims:

- to encourage language learning and promoting linguistic diversity in society;
- to promote a healthy multilingual economy, and
- to give citizens access to European Union legislation, procedures and information in their own languages."³

¹ Communication from the Commission to the Council, the European Parliament, the European Economic and Social Committee and the Committee of the Regions - A New Framework Strategy for Multilingualism COM(2005) 596 final Brussels, 22.11.2005 <http://europa.eu.int/languages/servlets/Doc?id=913>

² European Commission press release <http://europa.eu.int/rapid/pressReleasesAction.do?reference=IP/05/1451&format=HTML&aged=0&language=EN&guiLanguage=en#fn1>

³ <http://europa.eu.int/languages/servlets/Doc?id=913>



The Tower of Babel is an ancient symbol of the multilingualism in the Bible⁴

Ever since the European Year of Languages in 2001⁵ was organised by the European Council, the European Day of Languages has been held every September 26 to help the public appreciate the importance of language learning, to raise awareness of all the languages spoken in Europe and to encourage lifelong language learning. It is a celebration of Europe's linguistic diversity.

The European Commission has also launched recently a new portal for European languages⁶, which is available in all the 20 official languages of the European Union. It is a useful information source of multilingualism and can be a starting point for every project. The resource given has been prepared for the general public and covers a range from the Union's policies to encourage language learning and linguistic diversity. The main areas covered are:

- linguistic diversity
- language learning
- language teaching
- translation
- interpretation
- language technology

A wide range of information is given for each of them from EU and national rules to a round up of employment opportunities for professional linguists with the Union's institutions. In fact, the Communication also stresses the importance of language skills to worker mobility and the

⁴ Pieter Breugel: Tower of Babel

⁵ http://europa.eu.int/comm/education/policies/lang/awareness/year2001_en.html

⁶ <http://europa.eu.int/languages/>

competitiveness of the EU economy. The Commission will publish a study next year on the impact on the European economy of shortages of languages skills.

It is worth mentioning the Eurobarometer⁷ survey published on the web site that was carried out between May and June 2005 among European citizens including those of the accession countries (Bulgaria and Romania), of candidate countries (Croatia and Turkey) and the Turkish Cypriot Community. One of the most interesting results is that half of the people interviewed say that they can hold a conversation in a second language apart from their mother tongue.



Tower of Babel in the Maciejowski Bible⁸

Why Multilingualism is important?

In Europe we want to live in a socially inclusive society in which diverse cultures live in mutual understanding, building at the same time a common European identity.

Language, together with the shared knowledge and traditions, which passed from one generation to another, is an important part of an individual's cultural identity.

We strongly believe that the diversity of languages, traditions and historical experiences enriches us all and fosters our common potential for creativity.

Let us make languages connect people and cultures not divide them. This is an important role for cultural institutions.

Take the case of museums; multilingualism is of significant importance. Museums define their sphere of tasks as collecting, making available, preserving, researching and exhibiting objects. A multilingual exchange of information on objects supports museums in their tasks on the one hand and on the other hand the users of the products of museum work (visitors).

Museums collect objects whose meaning renders them unique and one-of-a-kind. However, the physical objects can only be available in one place at one particular time, making them accessible only to a few people. In order to make information about museum pieces available to as wide a target group as possible, a special importance lies in the accessibility of the relevant information on the Internet and in overcoming language barriers. Web sites are extremely powerful mean to do that.

Nonetheless, multilingual exchange of information about museum pieces is also of interest for cultural tourism and therefore for economic reasons. A museum visitor wants to know how to access such objects, in other words, which museum is displaying the objects at what point in time. Museums need to be able to make this information available in different languages in order to reach visitors from neighbouring countries.

⁷ Europeans and languages. A survey in 25 EU Member States, in the accession countries (Bulgaria and Romania), the candidate countries (Croatia and Turkey) and among the Turkish Cypriot Community
<http://europa.eu.int/languages/en/document/80/20>

⁸ http://en.wikipedia.org/wiki/Image:Maciejowski_Tower_of_Babel.jpg

Multilingualism is of special interest to smaller and local museums in Europe, to preserve local and national differences and to make available their peculiarities and unique characteristics to others.

Objects that originally belonged together have been spread around the world by means of exchange, purchase, division of goods and also by theft or violent conflict. To recreate relationships between the parts of collections that have been dispersed to multiple institutions and countries, it is essential to exchange relevant information and for this to happen multilingual accessibility is a prerequisite.

Further, it can be assumed that many objects can be qualified through a provenance reconstruction that crosses borders. The single objects mutually contextualise one another. And cross-border communication implies the use of multiple languages.

Another point of view is the quality and effectiveness of communication on the Internet. Information technologies dramatically changed users' behaviour at the end of twentieth century and a constant increase in demands and expectations from new services can be observed. Some countries report that the number of virtual visits to cultural institutions is becoming higher than real visits. Therefore each institution should take care about communication on the Internet and the best medium for this is an institutional website. Cultural institutions have become aware of the power of websites and have been creating their own websites since the 1990s. Beyond the problem of guaranteeing a regular maintenance of the information provided, multilingualism plays again a strategic role,

The majority of websites are addressed to their own small communities, such as university members, public library readers or the citizens of a town in which a museum is located. However, the more useful information that can be found on a website, the more Internet users visit them regardless of borders. Language is the major barrier to foreigners in making use of these websites.

Whilst policies and initiatives aimed at preserving languages are the prime responsibility of Member States, community action can play a catalytic role at European level adding value to the Member States' efforts.

The development of multilingualism on the Internet has been stimulated in recent years by the European Commission by supporting trans-national projects, fostering partnership between digital content owners and language industries.

However, support for high quality multilingual resources still needs to be enhanced. A pan-European inventory and library of mature linguistic tools, resources and applications as well as qualified centres of competence and excellence would provide helpful support.

Online access to this inventory, oriented towards problem-solving, providing cultural institutions with appropriate solutions for specific problems related to linguistic and cultural customization would be beneficial for the improvement of multilingualism in the web cultural applications.

This Handbook is intended as a contribution to this pan-European inventory.

Europe's experiences in multiculturalism and multilingualism represent an enormous strength that European cultural institutions should be able to exploit by positioning themselves in the new digital sphere of information and knowledge society.

1.2 EXECUTIVE SUMMARY

This document was created for cultural institutions to emphasize the importance of multilingualism, and to provide them information and tools for establishing multilingual access to their collections.

In the **Introduction** we summarize the whole survey process carried out by the WP3 working group in the scope of the MINERVA Plus Project. The aim of the survey was mapping the multilingualism of the cultural sites and collecting information on multilingual thesauri in use. The survey lasted for a year from June 2004 to June 2005 in two runs, the results are presented in the following chapters.

During the survey process we realized that we need to learn about official and minority languages and legislation within different countries and so we started to collect **Country reports**. This information should be the starting point in each European Union project because it helps to understand the differences between countries. Each report has the same structure: multilingual diversity of the country, an evaluation of the participation in the survey and use of multilingual thesauri or controlled vocabularies.

One of the practical aims of the MINERVA Project is to share the **Best practice examples**. Country representatives were asked to nominate the best practice examples for multilingual websites and thesauri. We have summarized the results of the nominations for **Best practice examples for multilingual thesauri** and introduced some of them in detail, which are already in use in many different countries.

In the survey we collected 657 multilingual websites⁹ from all over Europe. We present the **Best practice examples of multilingual cultural websites**, which are available in two or more languages, and meet the requirements of the 7th chapter of the *Quality Principles for cultural Web Sites: a handbook*¹⁰ published by the MINERVA Plus WP5 working group. Some of them implements thesaurus for information retrieval.

From the results, and findings we set up the **Conclusions** about the importance of multilingualism, and the use of multilingual thesauri.

We also made same proposal for the future in the **Future perspectives** about supporting the translation of the well-tested thesauri, the quality test beds for thesauri, and the further collection of multilingual thesauri.

1.3 INTRODUCTION – ABOUT THE SURVEY

After accession to the European Union the new member states became a part of a multicultural and multilingual community. At present there are 20 official, and about 150 estimated minority and immigrant languages are spoken in the enlarged European Union¹¹. Thus information retrieval whether on the Web or in a common database can be a serious problem. That is why, at the kick off meeting of the MINERVA Plus Project in Budapest February 2004, it was decided to establish a working group specializing in multilingual issues, especially on multilingual thesauri. The working

⁹ MINERVA Institutions <http://www.minervaeurope.org/institutions.htm>

¹⁰ <http://www.minervaeurope.org/publications/qualitycriteria.htm>

¹¹ Calimera Guidelines: Cultural Applications: Local Institutions Mediating Electronic Resources, Multilingualism, 2004. <http://www.calimera.org/Lists/Guidelines/Multilingualism.htm>

group was a follow up of the work carried out by the working group by the MINERVA Project Work Package 3 (WP3), led by France.

Instead of creating a brand new multilingual thesaurus for the project's purposes, we decided to make a survey of multilingual websites and thesauri. This also gave us a good opportunity to discover the usage of multilingual thesauri all over Europe. The survey was completely voluntary, and we declare that our results cannot be considered to be statistically relevant. They can be best referred to as a random sampling. The reason for this is explained by the different customs of the member states, different methods of circulating and gathering information implemented by the national representatives and the different social attitudes of each country towards the issue of multilingualism and consequently the different levels of maturity of the digital products in terms of multilingual features.

The coordinators' attitudes, working fields and positions made a major impact on their countries' results. Some countries, including Israel, The Netherlands and Slovakia, had just finished a survey and were able to contribute these results offline. Other countries, including Poland, Greece and Russia, decided to send offline results because of a shortage of time or resources; these were added to the online results in the same format.

The aim of the survey was mapping multilingual access to the European digital cultural content. To implement the survey we compiled a website <http://www.mek.oszk.hu/minerva/survey>, which was used for data collection and displaying the actual results. The online questionnaire could be reached from the front page. The questionnaire had two major parts. The first section was for auditing the multilingualism of the cultural websites. The second part could be filled out only by institutions that declared the use of controlled vocabularies for information retrieval in their database. This part was based on an Israeli questionnaire that was developed for a different survey. The results could be continuously followed online. There were separate links from the front page to the *"Statistics"*, to the registered *"Institutions"*, and to the *"Controlled vocabularies"* grouped by the countries.

The statistics were calculated by individual countries and also for the results of the whole survey. The institution's types, the number of the languages available on the site, the site availability in English and the type of searching tools were analyzed. *"Institutions"* showed the names of the registered institutions linked to their websites, so that the site could be easily reviewed. *"Controlled vocabularies"* showed the names of the registered thesauri and their registration form.

The first run of the data collection started in June 2004 and ended in August. In the first analysis there were 236 answers from 21 states. This high score indicated also the diversity of participation. From 1 to 40 institutions answered per state and registered their websites in our database. There were 67 libraries, 63 museums, 35 archives, 21 cultural sites, and 45 other institutions. The results of the first run demonstrated that the 30% of the websites were still monolingual, 43% were bilingual, and about 26% were multilingual. There were 31 thesauri registered: 13 from Italy, 10 from the United Kingdom, 6 from Hungary, 1 from the Netherlands, and 1 from Austria.

The working group had its first meeting on 12th of November 2004 in Budapest. The members of the working group presented a short country report. The slides are available on the official website of the survey by clicking on the *"Download the slide shows"*. It was clear, that there are different legislation and customs in each member states and so we planned to collect country reports of multilingual aspects. The group agreed on new rules for the survey and restrictions for the results. We started a second run of the survey for those countries that were underrepresented in the first run. We also decided to create a mailing list (WP3 list) for circulating general information and discussion. We set up the criteria for the best practices examples and agreed on definitions.

The second meeting took place in Berlin on the 8th of April 2005, during the two day WP5 meeting on quality of the websites. We gained useful experiences. We realised that it would be useful to get

to know about the multilingual issues from each country in a sophisticated way and so we decided to collect country reports. This will also help us to find the best practices examples to share. We agreed on the form of the country reports and the deadline for preparing them.

The second run of the survey closed at the end of May 2005. The combined results of the two runs of the survey doubled those of the first. There were 676 websites registered from 24 countries. Some countries, like Germany, Italy, Greece, Israel and Malta sent additional information, but no information came from Cyprus, Latvia, Lithuania or Luxembourg. There were 265 museums, 138 libraries, 98 archives, 65 cultural sites, and 129 other websites registered. 179 of them were monolingual, the majority (310) were bilingual, 123 were available in 4 languages, 14 in 5 languages, 10 in 6 languages, 4 in 7 languages, 3 in 9 languages, and 1 in 34 languages. 491 out of the 676 websites were available in English. There were 106 registered controlled vocabularies in our database: 1 from Austria, 3 from France, 22 from Germany, 6 from Hungary, 30 from Israel, 13 from Italy, 19 from Russia, 1 from Sweden, 1 from The Netherlands and 10 from the United Kingdom.

The third meeting took place in Budapest on the 8th of September 2005. The participants of the meeting established an editorial board of this document. We agreed on the timeline, set up the structure of the deliverable and shared the tasks among the group.

1.4 DEFINITIONS

Definition of terms used in the survey:

Cultural Site: is a website of a cultural institution (libraries, museums, archives) or a website providing cultural information having a digital collection (virtual galleries, cultural databases, historical sites).

Multilingual website: is a website providing information in two or more languages

We understand that thesaurus is a special type of controlled vocabulary, in which the relations between the terms are specified. We are looking for multilingual thesauri focusing on cultural coverage, which can be used for online information retrieval on a cultural website.

A controlled vocabulary¹² is a list of terms that have been explicitly enumerated. This list is controlled by and is available from a controlled vocabulary registration authority. All terms in a controlled vocabulary should have an unambiguous, non-redundant definition. This is a design goal that may not be true in practice. It depends on how strict the controlled vocabulary registration authority is regarding registration of terms into a controlled vocabulary. As a minimum the following two rules should be enforced:

- If the same term is commonly used to mean different concepts in different contexts, then its name is explicitly qualified to resolve this ambiguity.
- If multiple terms are used to mean the same thing, one of the terms is identified as the preferred term in the controlled vocabulary and the other terms are listed as synonyms, aliases or non-preferred.

A thesaurus is a networked collection of controlled vocabulary terms. This means that a thesaurus uses associative relationships in addition to parent-child relationships. The expressiveness of the associative relationships in a thesaurus vary and can be as simple as “related to term” as in term A is related to term B.

¹² What are the differences between a vocabulary, a taxonomy, a thesaurus, an ontology, and a meta-model?
<http://www.metamodel.com/article.php?story=20030115211223271>

A **thesaurus** has two kinds of links: broader/narrower term, which is much like the generalization/specialization link, but may include a variety of others (just like a taxonomy). In fact, the broader/narrower links of a thesaurus is not really different from a taxonomy, as described above. A thesaurus has another kind of link, which typically will not be a hierarchical relation, although it could be. This link may not have any explicit meaning at all, other than that there is some relationship between the two terms.

Additional information about thesauri:

What controlled vocabularies, taxonomies, thesauri, ontologies, and meta-models all have in common are:

- They are approaches to help structure, classify, model, and or represent the concepts and relationships pertaining to some subject matter of interest to some community.
- They are intended to enable a community to come to agreement and to commit to use the same terms in the same way.
- There is a set of terms that some community agrees to use to refer to these concepts and relationships.
- The meaning of the terms is specified in some way and to some degree.
- They are fuzzy, ill-defined notions used in many different ways by different individuals and communities.

Controlled Vocabulary vs Free Text¹³

When you search an electronic database for information on a specific topic, you must find a balance between achieving high **precision** and achieving high **recall**. A search which results in high precision will be narrow, including only records which are very focused on your topic. However, this type of search may be so focused that you miss out on some information which may be relevant. A search which results in high recall will be broader and more inclusive, but may retrieve irrelevant information which you then have to sort through.

Controlled Vocabulary

Most electronic databases allow you to search a subject by controlled vocabulary. This is often the best way to strike that balance between precision and recall. Controlled vocabulary is a set of pre-determined terms which are used consistently to describe certain concepts. Experts in a discipline analyze an article and choose the appropriate terms from the controlled vocabulary which best characterize what the article is about. All articles which address the same concept will be indexed using the same term or combination of terms. .

Thesaurus

Of course, to use controlled vocabulary, you must know what the terms are. The list of these terms is called a thesaurus. Many electronic databases allow you to search the thesaurus online to find the appropriate term for your search. Some databases, including OVID databases, will automatically map, or translate the term you type to the closest matching controlled vocabulary term and perform the search on that controlled vocabulary term.

¹³ Information adapted by **Shauna Rutherford**, University of Calgary Library, from: Barclay, Donald (ed). 1995. *Teaching Electronic Information Literacy: A How-To-Do-It Manual*. New York: Neil Schuman. (p. 63-64).

Controlled vocabulary terms can usually be found in the **subject headings** or **descriptor** fields of a database record. When you search by controlled vocabulary, the system is looking for those terms only in the subject heading or descriptor fields, not in the other fields of the database.

Advantages:

Controlled vocabulary ensures that you retrieve all records which address the same topic, regardless of which words the authors use to describe that topic. Synonyms are all indexed under the same controlled vocabulary term, so the searcher is spared the job of thinking of and searching every term that describes a certain topic. Controlled vocabulary also avoids problems with spelling variations.

Disadvantages:

There will be times when using controlled vocabulary does not result in the exact search that you need. New topics are not well represented by controlled vocabulary. As well a very specific and defined topic may not be represented in the controlled vocabulary which provides a subject heading which is much too broad.

Free Text

Almost all electronic databases allow **free-text** or **keyword searching**. In this type of search, the system usually looks for your search terms in every field of the record (not just in the subject heading or descriptor fields) and it looks for those terms to occur exactly as you type them, without mapping or translating them to controlled vocabulary terms.

Advantages

Free-text searching can often provide more results in a shorter time span because you are not reviewing the thesaurus for the controlled subject heading. It is appropriate for very specific searches or when the topic you are looking for is relatively new.

Disadvantage

Free-text searching often results in missed records that are very relevant to your search topic. You must spend more time planning your search strategy to ensure that you are searching all appropriate synonyms of your search term. Success, therefore, often depends on your familiarity with the search topic and your ability to identify appropriate keywords and their synonyms.

2. Country reports

2.1 CZECH REPUBLIC

2.1.1 Population and Languages spoken

The number of inhabitants in the Czech Republic is about 10 million. 90.4% of the population is Czech by nationality although many other nationalities are represented (see the table below). 94,1% citizens speak Czech, which is the official language of the Czech Republic.

Nationalities in the Czech Republic in 2001

<i>Population in total</i>	<i>10 230 060</i>	<i>100%</i>
Czech	9 249 777	90,4
Moravian	380 474	3,7
Slovakian	193 190	1,9
Polish	51 968	0,5
German	39 106	0,4
Ukrainian	22 112	0,2
Vietnamese	17 462	0,2
Hungarian	14 672	0,1
Russian	12 369	0,1
Romany/gypsy	11 746	0,1
Silesian	10 878	0,1
Bulgarian	4 363	0
Grecian	3 219	0
Serbian	1 801	0
Croatian	1 585	0
Romanian	1 238	0
Albanian	690	0
Others	39 477	0,4
U/I	172 827	1,7

2.1.2 The survey in the Czech Republic

In the first round of the survey, 15 cultural institutions were chosen; the survey was completed by studying their web sites via the Internet. This seemed to be the most suitable method of the obtaining valid results. The cultural institutions were grouped into 4 categories: museums, memorials, galleries and libraries.

Museums

Museum of Decorative Arts in Prague

National Technical Museum in Prague

Technical Museum in Brno

National Museum of Agriculture in Prague

The Moravian Museum

Comenius Museum in Uherský Brod

Museum of Puppets in Chrudim

Languages used

CZ, EN

CZ, EN

CZ

CZ, EN, DE

CZ, EN

CZ

CZ, EN, DE, FR, NL, IT

<u>Hussite Museum in Tábor</u>	CZ, EN, DE
<u>Museum of Glass and Jewellery in Jablonec nad Nisou</u>	CZ
<u>The Wallachian Open Air Museum in Rožnov</u>	CZ, DE, EN

Memorials

<u>Memorial Lidice</u>	CZ, EN, DE
<u>Memorial Terezín</u>	CZ, EN, DE

Galleries

<u>National Gallery in Prague</u>	CZ, EN
<u>Moravian Gallery in Brno</u>	CZ, EN

Libraries

<u>National Library of the Czech Republic</u>	CZ, EN
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In the second round of the survey, a random sample of the websites of members of the Association of the Museums and Galleries of the Czech Republic (AMG) were checked. The AMG has 856 official members.

In Prague there are 51 institutions; 26 museums and 25 other cultural institutions (galleries, memorials etc). The survey found that, among the Prague museums websites 19.2% were monolingual, 69.2 % were bilingual and 11.6% were multilingual; 80.8 % were available in English. The survey found that, among the non-Prague museums websites: 33 % were monolingual, 40% were bilingual websites and 27% were multilingual websites; 67% were available in English.

The results from non-Prague museums were as follows:

Museums

Museums	Languages used
The City of Těšín Museum	CZ
The Pharmaceutical Museum Kuks	CZ
Regional Museum Česká Lípa	CZ
City Museum Ústí nad Labem	CZ
Regional Museum of Kroměříž	CZ
South Moravian Museum in Znojmo	CZ, EN
The Museum of Moravian Slovakia	CZ, EN
East Bohemian Museum in Pardubice	CZ, EN
The Museum of Mlada Boleslav Region	CZ, EN
The Museum of Romani (Gypsy) Culture	CZ, EN
Sports Cars Museum Lány	CZ, EN
Museum Podkrkonoší in Trutnov	CZ, EN, DE
Museum of Historical Motorcycles and Bohemian Toys Museum Kašperské Hory	CZ, EN, DE
Regional Historical and Geographical Museum in Šumperk	CZ, EN, DE, PL
The Town Museum Nová Paka	CZ, EN, DE
Technical Museum in Kopřivnice	CZ, EN, DE, FR, PL, RU

Portals

The Server muzeí a galerií ČR (Association of the Museums and Galleries of the Czech Republic: <http://www.cz-museums.cz/>) is the most comprehensive portal of the Czech museums. An English version is currently under construction.

Information on museums and cultural heritage can be found on the portal Startpage (<http://muzea.startpage.cz/>) as well, but only in the Czech language, the same situation is on the Seznam web catalogue ([Muzea](http://muzea.seznam.cz/)).

Prague museums are described and listed on the portal 'Prague - Heart of Europe' (http://www.heartofeurope.cz/museum_national1.html), which is used by foreign visitors to Prague and has an English version.

There are several library portals. A list of the most comprehensive can be found on the home page of the National Library of the Czech Republic (<http://www.nkp.cz/en/>). Uniform Information Gateway (<http://www.jib.cz/>), Conspectus (<http://conspectus.nkp.cz/>), Memoria Project – Manuscriptorium (<http://www.memoria.cz/>) and Kramerius (<http://kramerius.nkp.cz/>) all have an English version.

Czech libraries can be found also on Kknihovny.cz (http://www.knihovny.cz/en_index.php3), which provides information on Czech libraries, their collections, information resources, services and how to access and use them.

Comparison of findings

Websites included in the MINERVA Survey: 86.7% available in English.

Websites included in the survey of Prague cultural institutions: 80.8 % available in English.

Websites of other Czech museums and institutions: 67 % available in English.

2.1.3 Thesauri and controlled vocabularies used

No multilingual thesauri with cultural coverage were found to be available online among the institutions included in the survey. Relations between terms were mostly done using links or some other hypertext methods. Some of the institutions used free text indexing, but most did not use any sophisticated retrieval tools. The same situation is true of online controlled vocabularies or e-glossaries.

Library of Congress Subject Headings (LCSH)

Library of Congress Subject Headings (LCSH) are currently used in the Czech Republic as a source of English equivalents of subject terms, a Czech translation does not exist.

UNESCO Thesaurus

A Czech translation of the UNESCO thesaurus does not exist.

2.2 ESTONIA

2.2.1 Population and Languages spoken

Estonia has about 1.351 million inhabitants (as of January 2005). The largest ethnic groups are Estonians (68%), Russians (26%), Ukrainians (2%), Belarussians (1%) and Finns (1%).

Estonian is the only official language in Estonia in local government and state institutions. The Estonian language belongs to the Finno-Ugric language family and is closely related to Finnish. Finnish, English, Russian and German are also widely spoken and understood in Estonia.

2.2.2 The survey in Estonia

In 2004, 8 Estonian institutions took part in the MINERVA survey of multilingualism in cultural websites. These included 2 archives, 1 library, 4 museums and 1 other cultural organisation:

Estonian State Archives (<http://riigi.arhiiv.ee/>)
 Estonian Historical Archives (<http://www.eha.ee/>)
 National Library of Estonia (<http://www.nlib.ee/>)
 Estonian Theatre and Music Museum (<http://www.tmm.ee/>)
 Estonian National Museum (<http://www.erm.ee/>)
 The Art Museum of Tartu (<http://www.tartmus.ee/>)
 Estonian Museum of Applied Art and Design (<http://www.etdm.ee/>)
 Conservation Centre Kanut (<http://www.kanut.ee/>)

As this was not a representative sample, 34 additional websites were surveyed via the Internet. These included 30 museums (museums within the government of the Ministry of Culture, county museums and municipal museums financed by the Ministry of Culture), 20 libraries (research and special libraries and central libraries) and 4 archives (governmental and national archival institutions).

		Est	Eng	Rus	Ger	Fin	Search tools
Museums within the government of the Ministry of Culture:							
Central museums:							
Art Museum of Estonia	http://www.ekm.ee/	+	+				-
Estonian Health Care Museum	http://www.tervishoiumuuseum.ee/	+	+	+			-
Estonian History Museum	http://www.eam.ee/	+	+				-
Estonian Maritime Museum	http://www.meremuuseum.ee/	+					-
Estonian National Museum	http://www.erm.ee/	+	+	+		+	free text
Estonian Open Air Museum	http://www.evm.ee/	+	+	+			-
Estonian Sports Museum	http://www.spordimuuseum.ee/	+					-
Estonian Theatre and Music Museum	http://www.tmm.ee/	+					-
Museum of Estonian Architecture	http://www.arhitektuurimuuseum.ee/	+	+				-
State museums:							
Estonian Museum of Applied Art and Design	http://www.etdm.ee/	+	+				free text
Tartu Art Museum	http://www.tartmus.ee/	+					-
County museums:							

Harjumaa Museum	http://www.muuseum.harju.ee/	+	+				-
Hiiumaa Museum	http://www.muuseum.hiiumaa.ee/	+					-
Iisaku Museum	http://www.hot.ee/iisakumuuseum/	+					-
Järvamaa Museum	http://www.jarva.ee/?CatID=201	+	+		+	+	free text
Läänemaa Museum	http://www.muuseum.haapsalu.ee/	+					free text
Mahtra Peasantry Museum	http://www.hot.ee/mahtram/	+	+				-
Memorial Museum of Dr. Fr. R. Kreutzwald	http://www.hot.ee/muuseumvoru/	+					-
Parish School Museum of Oskar Luts at Palamuse	http://www.palmuseum.ee/	+	+	+	+	+	-
Põlva Peasantry Museum	http://talurahvamuuseum.polvamaa.ee/	+					free text
Pärnu Museum	http://www.pernau.ee/	+	+				-
Saaremaa Museum	http://www.saaremaamuuseum.ee/	+	+				-
Tartumaa Museum	http://www.tartumaamuuseum.ee/	+					-
Valga Museum	http://www.valgamuuseum.ee/	+					-
Viljandi Museum	http://www.muuseum.viljandimaa.ee/	+	+				free text
Foundations:							
Anton Hansen Tammsaare Museum at Vargamäe	http://ice.estnet.ee/albuuv/?id=257	+					-
Museums of Virumaa	http://www.svm.ee/	+	+				-
Municipal museums:							
Juhan Liiv Museum	http://www.muusa.ee/	+					-
Muhu Museum	http://www.muhumuuseum.ee/	+	+				-
Setu Farm Museum	http://www.hot.ee/setomuuseum/	+	+				-
Libraries:							
Research and special libraries:							
Academic Library of Tallinn University	http://www.tulib.ee/	+					free text
Estonian National Library	http://www.nlib.ee/	+	+				free text
Estonian Repository Library	http://www.hoiuraamatukogu.ee/	+					-
Tartu University Library	http://www.utlib.ee/	+	+		+		-
Central libraries:							
Harju County Library	-						
Jõgeva County Central Library	http://www.poltsamaa.ee/index.php?lang=est&main_id=72,661,664	+					-
Jõhvi Central Library	-						
Järva County Central Library	http://raamat.paide.ee/	+					-
Kohtla-Järve Central Library	http://k-jarve.lib.ee/	+		+			-
Kõrveküla Library / Tartu County Central Library	http://tmk.tartuvv.ee/tmk/	+					free text
Kärdla Central Library	-						
Lääne County Central Library	http://www.lib.haapsalu.ee/	+	+	+			-
Lääne-Viru County Central Library	http://www.lvkrk.ee/	+					-
Narva Central Library	-						
Põlva Central Library	http://www.raamat.polva.ee/	+	+	+			-
Pärnu Central Library	http://www.pkr.ee/	+					-

Rapla Central Library	http://www.raplakrk.ee/	+					-
Saare County Central Library	http://www.kuressaare.ee/skr/	+	+				-
Sillamäe City Central Library	http://www.slib.ee/	+		+			free text
Tallinn Central Library	http://www.keskraamatukogu.ee/	+					-
Tartu City Central Library	http://www.luts.ee/	+	+				free text
Valga Central Library	http://www.valgark.ee/	+					-
Viljandi City Library	http://www.raamatukogu.viljandi.ee/	+	+				free text
Võru County Central Library	http://lib.werro.ee/	+					free text
Archives:							
Governmental and national archival institutions:							
Estonian Filmarchive	http://www.filmi.arhiiv.ee/	+	+				free text
Estonian Historical Archives	http://www.eha.ee/	+	+		+		-
Estonian State Archives	http://www.riigi.arhiiv.ee/	+	+	+			free text
National Archives of Estonia	http://www.ra.ee/	+	+				-

24 of these websites were monolingual while 30 were multilingual as follows:

- 20 sites were available in 2 languages
- 7 sites were available in 3 languages
- 2 site was available in 4 languages
- 1 site was available in 5 languages

4 foreign languages were represented including English (28), Russian (9), German (4) and Finnish (3). The extent to which the contents are available in these languages varies.

On the web pages there are many signs of work-in-progress: pages in other languages being announced or in an early stage of development.

2.2.3 Thesauri and controlled vocabularies used

At present there are no multilingual thesauri in use on the Web by any Estonian cultural institution. 15 sites provide free text search.

2.3 FRANCE

2.3.1 Population and Languages spoken

The linguistic situation in France

The political context

Since the launch in 1998 of the Government Action Plan for the Information Society (PAGSI) that made culture and language two of its priorities the French government has been actively supporting and promoting research efforts and applications in the field of language. Here are some examples of this multifaceted involvement:

- Taking part in multilingual European projects with an educational content (eg Linguanet : <http://www.linguanet-europa.org>)
- Taking part in multilingual European projects with a cultural content (eg Herein: <http://www.european-heritage.net/sdv/herein/> , Narcisse, Minerva or Michael)
- Taking part in multilingual European projects with a scientific content (eg Cismef: <http://www.chu-rouen.fr/cismef/>)
- Taking part in the equipment of language (terminology committees) or in the industrialisation of language through supporting the creation of basic tools and linguistic resources in the oral and written areas (support of the linguistic research laboratories by the ministries in charge of industry, culture and education)
- Promoting knowledge in linguistic engineering by making it available to the communities of research workers and industrialists (eg Technolangue project: <http://www.technolangue.net>)

With its rich past and its large dissemination the French language can face the future with confidence. In order to guarantee its national and international role in an ever changing world the general policy in favour of the French language has taken into account all areas: the role of the French language in the social cohesion, its teaching (in France and abroad), its enrichment (creation of new words), its display through the new technologies and on the web, and its dissemination, but also its relationship with the other languages.

General overview and actions taken

France possesses a very rich linguistic heritage.

The languages of France are our common good and contribute to the creativity of our country and to its cultural influence at the side of the French language.

By the expression “languages of France” we mean the regional or minority languages that are traditionally spoken by French citizens on the territory of the Republic and that are not the official language of any state.

For this reason neither Portuguese nor Chinese are languages of France though spoken by many French citizens. Apart from the fact that they are not endangered languages, they are regularly taught within the education system as foreign languages. Western Armenian is the language of the diaspora and thus a language of France whereas Eastern Armenian is the official language of the Republic of Armenia. Colloquial Arabic is the language that is actually spoken by many French people. It differs from literary or classical Arabic that is the official language of Arabic countries and is used in the media but not by the general population.

These definition criteria are adapted from the European Charter for Regional or Minority Languages. France’s linguistic policy is indeed developed within the European framework.

Languages that transcend political frontiers, such as the Basque, Catalan, Flemish and Frankish languages, illustrate the internal plurality and the unity of our common cultural space. They open doors on neighbouring countries. From this angle the languages of France can be viewed as means of cultural invention and as the components of a polyphonic ensemble where the imaginary, intellectual and affective worlds of the men and women of our country can express themselves freely.

On the basis of these criteria **more than seventy-five** languages of France can be counted in Metropolitan France and overseas areas. They are characterized by a great diversity. In Metropolitan France: Romance, Germanic, Celtic languages as well as Basque, a non-Indo-European language. Overseas: Creoles, Amerindian, Polynesian, Bantu (Mayotte) and Austronesian (New Caledonia) languages, among others. There is also a great demographic diversity between these languages. Three or four million people are speaking Arabic in France whereas Neku or Arhà are spoken only by a few dozen people. In between, the various Creoles or the Berber languages are spoken by about two million people in France.

The 1999 national census revealed that 26 % of adults living in France had regularly practiced in their youth a language other than French – Alsatian (660 000 speakers), Occitan (610 000), Oïl languages (580 000), Breton (290 000). For each of these languages one can add an equal – at least – number of occasional speakers. However language transmission in France is almost not effective any more in the family circle and relies today mostly on the teaching of these languages and their creativity in the artistic domain.

Metropolitan France

Regional languages : Alsatian, Basque, Breton, Catalan, Corsican, Western Flemish, Moselle Franconian, Franco-provençal, Oïl languages (Franc-Comtois, Walloon, Champenois, Picard, Norman, Gallo, Poitevin-Saintongeais, Lorrain, Bourguignon-Morvandiau), Oc languages or Occitan (Gascon, Languedocien, Provençal, Auvergnat, Limousin, Vivarese-Alpine).

Non-territorial languages: Colloquial Arabic, Western Armenian, Berber, Judeo-Spanish, Romany, Yiddish)

Overseas

Caribbean area:

French-based Creoles: Guadeloupean, Guyanese, Martiniquan, Reunionese;

Bushinenge Creoles of Guyana (Anglo-Portuguese-based): Saramaca, Aluku, Njuka, Paramaca;

Amerindian languages of Guyana: Galibi (or Kalina), Wayana, Palikur, Arawak (or Lokono), Wayampi, Emerillon;

Hmong

New Caledonia: twenty-eight Kanak languages.

Grande terre: Nyelâyu, Kumak, Caac, Yuaga, Jawe, Nemi, Fwâi, Pije, Pwaamei, Pwapwâ, Voh-Koné, Cèmuhi, Paicî, Ajië, Arhâ, Arhõ, Orôwe, Neku, Sîchë, Tîrî, Xârâcùù, Xaragurè, Drubéa, Numèè;

Loyalty Islands: Nengone, Drehu, Iaai, Fagauvea.

French Polynesia: Tahitian, Marquesan, Tuamotuan and Mangareva languages, languages spoken in the Austral Islands: Raivavae, Rapa and Rurutu languages.

Wallis and Futuna Islands: Wallisian, Futunian.

Mayotte :Maore, Malagasy dialect of Mayotte.

French Sign Language (Langue des signes française or LSF)

It is traditionally used by French citizens and is also a language of France.

Several legislative provisions and regulations define the place of the languages of France in the areas of culture, education and the media. The law of 4 August 1994 relative to the use of the

French language specifies: “The provisions of the present law apply without prejudice to the legislation and regulations relative to regional languages in France and is not against their use” (*article 21*).

The recognition by the French State of the specific position held by the languages of France in the nation’s cultural life was materialized by the creation in October 2001 of the Délégation générale à la langue française et aux langues de France.

The Ministry of Culture and Communication support and promote the languages of France through its multiple fields of intervention: music, literature, theatre, ethnological heritage, archives, museums, cinema, ... Moreover, specific credits have been allotted to the Délégation générale à la langue française et aux langues de France for the following priority objectives :

- Helping publications in or about the languages of France;
- Supporting the fields – such as the performing arts, singing, television and radio – where language act as a vector for creation
- Ensuring the presence of the languages of France through the new information and communication technologies;
- More generally, putting the emphasis on the interaction between language and culture and their importance in a living society.

<http://www.languesdefrance.com/>

At a time when economical or cultural transactions between countries are growing rapidly and Europe¹⁴ gets stronger a policy that guarantees the presence of the French language for French citizens and French national interests is asserted: (http://www.culture.gouv.fr/culture/dglf/Actualites/communication_ministre_17_mars.pdf).

The French linguistic situation has come under close scrutiny and has been studied conjointly by the two national analysis institutes – INSEE¹⁵ and INED¹⁶ – on the occasion of the last national census: http://www.ined.fr/publications/pop_et_soc/pes376.pdf

However this national policy goes together with a decided openness towards the other languages:

- Through the promotion of minority and/or regional languages that are part of France’s heritage. France’s linguistic heritage consists of 75 languages. However this list puts together idioms that have a variety of socio-linguistic status. It goes from the mostly spoken Creoles, which are the mother tongues of more than one million speakers and probably the regional languages that are the most alive, to the mostly written Bourguignon-Morvandiau which is only spoken by a few people nowadays and with no mother-to-baby transmission. See: http://www.culture.gouv.fr/culture/dglf/lang-reg/rapport_cerquiglini/langues-france.html
http://www.culture.gouv.fr/dglf/politique-langue/assises/actes_assises.pdf
http://www.insee.fr/fr/insee_regions/idf/rfc/docs/alapage226.pdf
- Through the creation of an Observatory of Linguistic Practice (Observatoire des pratiques linguistiques). The observatory’s task is to study current linguistic practices in France as well as the modalities and the effects of the contact between languages. The observatory was established in 1999 within the Délégation générale à la langue française et aux langues de France (DGLFLF), an interdepartmental service for culture and communication. It aims at inventorying, developing, making available, the knowledge pertaining to France’s linguistic situation, in order to provide information useful for developing cultural, educational or social policies. One of its aims is also to make more widely known the common linguistic heritage

¹⁴ http://culture.gouv.fr/culture/dglf/lois/politiques_ling_eng_Europe.pdf

¹⁵ INSEE : Institut National de la Statistique et des Etudes Economiques (French National Institute of Statistics and Economic Studies)

¹⁶ INED : Institut National d’Etudes Démographiques (French National Institute for Demographic Studies)

that consists of all the languages and linguistic varieties spoken in France and that contribute to its diversity.

The activity of the observatory is organized around four axes:

- Research and study work: the observatory does not carry out research work as such but it is supporting and coordinating projects or research programmes on themes that are of interest to the French Ministry of Culture and Communication and – more generally – to the public authorities, the representatives, the decision-makers, the cultural or social actors.
- Network organisation and collaboration between teams and research centres that are working on the linguistic practices in France and French-speaking countries.
- Spreading of information collected and coming from the specialists, the persons in charge of the public policies, the general public.
- Preserving, building up, making available, promoting recorded oral corpus. These corpus are a working tool for research but gain with time a heritage value as well.
During its first phase of activity the observatory mobilized the research workers and encouraged the creation of networks. The second phase is dedicated to the creation of new spaces for the spreading of information which allow exchanges between decision-makers and social and cultural actors looking for scientific data. Since 1999 the Observatory has launched four calls for proposals on the following subjects: heterogeneity of linguistic practice (1999), observation of linguistic contacts (2000), familial transmission and non-didactic acquisition of languages (2001), the French sign language (2005). Outside the framework of calls for proposals the observatory is also supporting several projects or programmes. The Observatory launched in 2004 a wide programme on recorded oral corpus in partnership with the CNRS (French science research council) and the preservation institutions. A database will be available on the DGLFLF website in the future.
- Through the **evaluation of foreign language learning** (<http://www.senat.fr/rap/r03-063/r03-063.html>)
- Through the modernisation, the development, the diversification of the translation and interpreting tools (http://www.culture.gouv.fr/culture/dglf/terminologie/Decret_3_07_96.rtf). European integration and its corollary, the practice of multilingualism, are more and more frequent daily realities which can be observed in the public administration services, among other places. More and more often these services need to translate and interpret from and into French and this can only increase in the future. During its 2000-2003 mandate the Conseil supérieur de la langue française (High council for the French language) advocated the promotion of the knowledge of languages and cultures through the function of translator in its recommendations addressed to the Prime Minister (June 2003). On the initiative of the DGLFLF a working group on translation in the Civil Service was set up in June 2004. It is responsible for periodically bringing together representatives of the institutions and government services involved, in order to promote the emergence of practical solutions to the problems concerning translation and related activities.
- Through the availability of **terminological databases**.
The terminology plan relies on the terminology networks of the various linguistic areas in which it is also taking part. It is creating new terminological networks for the scientific and cultural areas of knowledge as well.
<http://www.termisti.refer.org/infoport.htm#réseaux>
<http://www.culture.gouv.fr/culture/dglf/terminologie/base-donnees.html>
<http://www.culture.fr/Langues/outils/Bases>

- Through a policy of **making digital cultural contents available** in several languages (http://www.numerique.culture.fr/fr/f_03.htm) which requires the availability of those cultural contents in at least three languages.

A law was passed in France in order to define and enrich France's linguistic policy. The law adopted on August 4, 1994 provides inter alia that every public administration service must translate the information which is intended for the public (website) and that it must do so in at least two foreign languages. The law also provides that pupils at school should be taught two languages other than French.

The Délégation générale à la langue française et aux langues de France (DGLFLF) is responsible for the institutional device and the coordination of law enforcement.

Multilingual issues in France

Issues of multilingual treatment in France:

Problem-solving in this area benefits largely from the reflections resulting from research on **Computational Linguistics** and from most watch or information retrieval applications that mobilize open web content and cannot limit their prospects to a single linguistic community. In the past years many agencies and French universities specialised in this area of linguistic treatment and made available large reservoirs of linguistic resources: e.g. <http://www.atilf.fr/>, <http://www.up.univ-mrs.fr/cilsh/>.

Problem-solving as approached through Computational Linguistics takes four forms:

-

1. Inventory of linguistic resources

The inventory of available and qualified linguistic resources determines the development of high added value applications in the area of linguistic processing. It is carried out both on the production of linguistic resources (dictionaries, terminologies, written corpus, oral corpus) and on that of basic component software (lemmatisation and alignment software).

2. Evaluation of the field of linguistic engineering

Linguistic engineering is a new field of engineering compared to more classic ones and it can be referred to in respect of complexity. Through the development of evaluation we are able to get non-ambiguous information on existing technologies and on priority application areas, as well as tools and reference methods. It also helps in the technological transfer from research to industry. Evaluation methods are built in order to create in the future a method of offer selection and product validation, in the fields of primary technology (syntactic parsing, indexers, speech synthesis, linguistic agents such as spell checker, search engine) and of integrated applications (terminological extractor, spoken dialog interface for information systems).

3. Reasoned information on standardization

- The field of linguistic engineering is more acutely confronted with the problem of standardization than other fields. French actors in the domain of linguistic engineering must therefore keep informed of standards evolution and anticipate the strategies of development. This is made possible by watching the standards bodies, by active participation in the process of standards development within the standards bodies (JTC1 ISO-CEI, CEN, AFNOR, W) and by a joint work between the Ministry of Culture and Communication and the French science research council (CNRS).

4. **Technological watch**

Technology users (systems integrators, service corporations, end users) should be able to get the most qualified information about technology offers on the market. A good organization of competitive intelligence is an essential vehicle in the process of innovation and competitiveness. Strategic information management is necessary to the performance. It is made available thanks to the dissemination and communication tools of the French Ministry of Culture and Communication (portal, website, intranet).

In order to meet these objectives several initiatives have been taken in the field of Research:

- The main initiative was taken by the Ministries in charge of research, industry, culture and communication and lead to the implementation of the **Technolanguage** project (<http://www.technolanguage.net>).

Project outline:

- Drawing on the observation that European projects or those carried by the French technological networks did not lead to a sufficient cumulative effect – due to the limited-scope use of the resources and tools that were created – **the Technolanguage programme** was conceived to cure this problem.
- The aim of this programme was to help develop basic tools and linguistic resources that could be disseminated at a reasonable cost for both industrialists and public laboratories. This would thus allow newcomers in the domain of language engineering to enter the field with the least investments. This aspect called “development of basic tools and resources” was supplemented by the setting up of comparative evaluation campaigns regarding written and oral treatment technologies.
- An information portal is planned in order to convey a global vision of the state of the art in this field.

Technolanguage I will be over at the end of 2005. However it is necessary to carry on with this action in some of its aspects if we do not want to lose what has already been achieved. France is thinking of launching a **Technolanguage 2** programme that would also take part in the setting up of the Lang-net network within the framework of ERA-net.

- In 2004 the French Ministry of research commissioned the Bureau Van Dijk consultancy to study the European market of language industry with a particular emphasis on the French market.

<http://www.technolanguage.net/IMG/pdf/Synthese%20Etude%20techno%20VD.pdf>

Some quantitative data has thus been collected about the language industry market:

- This is not a translation market
- It is an indirect market (“overlap phenomenon”) as language processing modules are inserted in multilingual projects
- 96 companies are concerned in France (the French market is the second after the UK’s)
- The European market represents € 510,000,000 per year.
- Language industries are distributed as follows between countries: Ireland (localization), Germany (speech), Japan (translation), France (machine translation and offer of technology).

It is important to keep in mind that there is no paradigm shift in this field but an evolution through knowledge capitalization. It is thus necessary to increase fundamental research efforts in the fields of computer science and linguistics and to develop programmes that are more applied and with return of methods.

- Two other elements are now also taken into account: the **European TC-STAR project** and the shift from the concept of pivot language to that of **coupling languages** (rare languages included). The TC-STAR project was accepted in the 6th European Commission Framework Programme. It focuses on speech-to-speech translation.
- A study has been launched within the Ministry of Culture and Communication about the state of the art and the publishing support for multilingual dictionaries:
http://culture.gouv.fr/culture/dglf/Langues_du_monde.pdf
- Within the framework of the MINERVA project recommendations for multilingual applications and inventories have been published. Particular attention has been paid to content input, research functionalities, the modelling of a thesaurus (interoperability issues) and information display (including character sets):
<http://www.culture.gouv.fr/culture/mrt/numerisation/fr/eeurope/Construire%20des%20thesaurus%20multilingues.htm>

2.3.2 The survey in France

Selected linguistic tools, significant experiences and good practice in the digital processing of cultural data

Among the French multilingual cultural websites that have been checked many are providing free text search tools. Very few multilingual controlled vocabularies are used for searching freely a multilingual website.

The examples of best practice for websites have been selected in accordance with the principles defined by MINERVA (Chapter 7th Checklist in the MINERVA Quality Principles Handbook):

Websites:

Among the examples of good practice one can record in respect of each of the criteria:

- *The quality and depth of multilingual treatment:* the website of the Musée des Augustins (Toulouse) <http://www.augustins.org>
- *The availability in at least three languages:* the websites from the collection of great archaeological sites (collection des Grands sites archéologiques) published by the Mission for Research and Technology of the French Ministry of Culture, about the Chauvet cave (<http://www.culture.gouv.fr/culture/arcnat/chauvet/fr/>), the Man of Tautavel (<http://www.tautavel.culture.gouv.fr>) and Life along the Danube (<http://www.culture.gouv.fr/culture/arcnat/harsova/fr>)
- *The ease of switching between languages :* the website “ Val-de Loire – patrimoine mondial ”
- *The bilingual treatment of a controlled vocabulary:* the catalogue of the Grandidier collection of Chinese ceramics (*catalogue de la collection Grandidier de céramiques chinoises*) on the website of the Museum of Asian Arts – Guimet uses a French-Chinese controlled vocabulary in the areas of humanities and art history, more specifically about Asian art and fire arts. This vocabulary comprises a value list, a classification, an index and a glossary and is made of 1 000 to 5 000 terms.
- *The volume and the level of the vocabulary processed:* the Unifrance website allows a search in its database about cinema through a number of lists of terms which add up to more than 10 000 terms in four languages while the website of the City of Carcassonne offers a

terminological analysis in three languages of the technical terms that are used. (<http://www.carcassonne.culture.fr/>).

- *The specifications and main functionalities of the website available in more than one language:* the website devoted to the organ builder Cavaillé, from the collection of great archaeological sites (collection des Grands sites archéologiques) published by the Mission for Research and Technology of the French Ministry of Culture (<http://www.culture.gouv.fr/culture/cavaillle-coll/de/index.html>)
- *The processing of non-European languages:* the website devoted to Underwater Archaeology (from the collection of great archaeological sites published by the Mission for Research and Technology of the French Ministry of Culture) is available in Arabic: <http://www.archeologie-sous-marine.culture.fr/>

The following table gives a synthetic overview of the examples of best practice checked against the quality criteria as defined in the context of the Minerva project.¹⁷

Criteria number :	1	2	3	4	5	6	7	8	9 & 10	Sum 1	A	B	C	Sum 2
Unifrance : French, English, Spanish, Japanese	1			1	1	1	1	1	+	6+	0.5	1	+	7.5++
L'Archéologie sous les mers : French, English, Arabic	1		0.5	1	1	1	1	1		6.5		1		7.5
TV France International (TVFI) : French, English, Spanish, Chinese (2), Japanese	1			1	1	1	1	1		6	1.5	1	+	8.5+
Val-de Loire – patrimoine mondial : French, English, German, Spanish, Italian	1			1	1	1	1	1		6	1.5			7.5
Museum Images : English, French, German, Spanish, Italian	1			1	1	1	1	1			1.5			7.5
Musée des Augustins (Toulouse) : French, English, Spanish	1			1	1	1	1	1		6		1		7
Centre Pompidou : French, English, Spanish	1			1	1	1	1	1		6	0.5			6.5
Musée d'Orsay : French, English, Spanish	1			1	1	1	0.5	1		5.5		1		6.5
La Cité de Carcassonne : French, English, Italian	1			1	1	1	0.5	1		5.5		1		6.5
Aristide Cavaillé-Coll, facteur d'orgues (1811-1899) : French, English, German	1			1	1	1	0.5	1		5.5		1		6.5
La grotte de Lascaux (Dordogne) : French, English,	1			1	1	1	0.5	1		5.5		1		6.5

¹⁷ The following criteria should be met if a site is to be considered multi-lingual. The degree of multi-linguality reflects the number of these criteria which are met; thus a site can be “75% multi-lingual” if not all the criteria are met. Some of the criteria overlap across the quality principles. Multi-linguality also impacts on the transparency of the site, on its accessibility and on its user-centricity, for example.

- Some site content should be available in more than one language
- Sign language may be supported
- Non-EU languages spoken by immigrant communities supported
- Site identity and profile information should be available in as many languages as possible
- The core functionality of the site (searching, navigation) should be available in multiple languages
- Ideally static content (images and descriptions, monographs, other cultural content) should also be available in multiple languages
- Switching between languages should be easy
- The site infrastructure and layout should not vary with language – site design and user interface language should be logically separate
- Multi-linguality should be driven by a formal multi-linguality policy
- Site elements should be reviewed in terms of the multi-linguality policy

Spanish						5							
Chasseur de la Préhistoire. l'Homme de Tautavel (Pyrénées orientales) : French, English, Spanish	1			1	1	1	0.5	1		5.5		1	6.5
La grotte Chauvet-pont-d'arc (Ardèche) : French, English, Spanish	1			1	1	1	0.5	1		5.5		1	6.5
Vivre au bord du Danube il y a 6500 ans (Roumanie) ¹⁸ : French, English, Romanian	1			1	1	1	0.5	1		5.5		1	6.5
Oeuvre Notre-Dame : French, English, German	1			1	1	1	0.5	1		5.5		1	6.5
Musée national de l'éducation (Rouen) : French, English, Spanish	1			1	1	1-	0.5	1		5.5-		1	6.5-
Museum of Asian Arts – Guimet : French, English, Chinese	1			1	1	1	0.5	1		5.5	0.5		+ 6+
Musée du Louvre : French, English	1			1	1	1	1	1		6			6
Château de Versailles : French, English, Japanese	1			1	1	1-	0.5	1		5.5	0.5		+ 6
IRCAM : French, English	1			1	1	1	1	1		6			6
Musées de Grasse : French, English, Spanish	1			1	1	1	0	1		5		1	6
Institut National de l'Audiovisuel (INA) : French, English, Spanish	1			1	1	1-	0.5	0,5		5-	0.5		+ 5.5 +
Musée Rodin : French, English (Spanish soon available)	1			1	1	1	1-	0,5	+	5.5			5.5
Musée d'art et d'histoire du judaïsme : French, English	1			1	1	1	0.5	1		5.5			5.5
Cité des sciences : French, English, Spanish	1			1	1	0.5	0.5	1		5	0.5		5.5
Théâtre de l'Odéon : French, English	1			1	1	1	0.5	1		5.5			5.5
Musée des Tissus et des Arts décoratifs (Lyon) : English, French	1			1	1	1	0.5	1		5.5			5.5
Musée de l'impression sur étoffes - Mulhouse : French, English	1			1	1	1	0.5	1		5.5			5.5
Radio France Internationale (19 languages)	1			0	0	0	1-	0		2.5-	9		+ 11.5

2.3.3 Thesauri and controlled vocabularies used

We selected as good practice medium to large sized thesauri available in several European languages, which are or aim to be available on line even if it still is in the project stage.

- In the field of architectural and archaeological policies: the HEREIN thesaurus

The “first multilingual thesaurus in the cultural field at an international level ” according to the Council of Europe is now available online¹⁹. This service is developed by the European Heritage Network (HEREIN). It aims at offering a terminological standard for national policies dealing with architectural and archaeological heritage and at helping the user of the website when surfing through the various online national reports. A French scientific committee was set up in October 2005 in order to further define how to make French heritage

¹⁸ Other multilingual websites maintained by the Mission for Research and Technology (French Ministry of Culture) are available from the websites Grands sites archéologiques (<http://www.culture.gouv.fr/culture/arnat/fr/index.html>) and Célébrations nationale (<http://www.celebrations.culture.fr/>)

¹⁹ The HEREIN thesaurus is available at : <http://www.european-heritage.net/sdx/herein/thesaurus/introduction.xsp>

policies available on the HEREIN database. The Herein thesaurus is made of more than 500 terms in seven languages (English, French, German, Spanish, Bulgarian, Polish and Slovenian) but eleven other languages will soon be available. It was constructed from scratch and based on the use of the equivalence, hierarchical and associative relationships. No source language was chosen. The three teams (from Spain, France and the UK) which constructed the thesaurus first created each a separate list of terms and then compared them. They first brought out the different classes representing the broadest level and sorted the terms into the classes. Then within each class the terms were ordered following the same hierarchical relationship for all linguistic versions of the thesaurus. Poly-hierarchy was avoided as much as possible.

When entering a query with the help of the thesaurus we can choose to specify what kind of relationships one wants to include: broader / narrower terms, related terms, preferred / non preferred terms, linguistic equivalents (exact / inexact).

- In the field of restoration and conservation of paintings: the NARCISSE vocabulary and the EROS project:

The Scientific Restoration Research Centre for Museums in France ([C2RME](#)) gave the impulse to the European NARCISSE project (Network of Art Research Computer Image SystemS) in the late 1980s. This project aimed at building a multilingual database to manage museum laboratory documentation relating to painting materials. A multilingual controlled vocabulary proved necessary to describe the works of art, the technical data relating to the photographic archives, the restoration and study reports. It was elaborated in German, Italian, Portuguese and French from the beginning and voluntarily restricted to 300 words. From 2001 onwards the NARCISSE vocabulary was used and updated within the framework of the EROS (European Research System) project which was launched in collaboration with the Mission for Research and Technology of the French Ministry of Culture. Currently, over 300,000 photographic and radiographic images, 10,000 technical reports, 500 3D objects, 200,000 quantitative analyses related to 56,000 works of art are accessible online in digital form on the EROS database.

The database allows research about the works depending on their fabrication technique, the materials used, their ageing process... The EROS system uses open source software that use the Web technologies and respect the new interoperability and content management standards. It relies on advanced content recognition techniques. It uses at the same time multilingual value lists (NARCISSE vocabulary), an SQL search engine operating on metadata tables and free text, a search engine operating on multilingual indexes extracted from full text with an English-French interface (Pertimm), a graphic 3D interface with query according to an ontological model (Sculpteur software²⁰), a semiautomatic clustering classification system (RETIN) and image similarity research based on a vectorial tool. The NARCISSE vocabulary is now translated in German, English, Catalan, Chinese, Danish, Spanish, French, Italian, Japanese, Portuguese and Russian. It is organized as a set of dictionaries for each translatable field and for each available language. Some of them are hierarchical. In order to get a quicker answer when searching the data within the main database is stored in a compact language independent format as short codes. The system is able to handle multiple entries within a single field. The thesaurus cannot only handle a full lexical hierarchy but also synonyms and complex character sets such as Japanese and Chinese (via Unicode encoding). The EROS database has been entirely translated from the French language into English, Japanese, Chinese and partially in Portuguese. In due course the system will be set up in the French network of restoration workshops.

²⁰ A description of the Sculpteur project is available at : <http://www.sculpteurweb.org/>

- **In the field of architecture: the *Thésaurus de l'architecture***²¹

The *Thésaurus de l'architecture* is developed by the Direction de l'architecture et du patrimoine (DAPA). It groups together in a methodical way the 1 135 terms used for the denomination of architectural works. These terms allow an indexing of the buildings analysed in the national Mérimée database about French heritage. The thesaurus has a hierarchical organisation. Main entries are sorted into functional categories such as religious, funeral, industrial use. The thesaurus contains concise definitions, scope notes, cross references. Collaboration at an international level lead to the integration of the American and British equivalents used in the Art and Architecture Thesaurus and the Thesaurus of the Royal Commission on the Historical Monuments of England. The Italian translation of the descriptors was developed in partnership with the Istituto Centrale per il Catalogo e la Documentazione.

- **In the field of religious objects : the *Thésaurus des objets religieux* (religious objects thesaurus)**

The *Thésaurus des objets religieux* can be accessed on the same website as the *Thésaurus de l'architecture*. It gives access to the description of religious movable objects of the Palissy database. The *Thésaurus des objets religieux* is part of the thesaurus that is used for the Mérimée, Palissy, Mémoire and Archidoc databases. Those databases are forming a homogeneous ensemble: the Mérimée database makes an inventory of the buildings where the movable objects studied in the Palissy database are kept while the Mémoire and Palissy databases contain respectively static images and bibliographical notes that can refer to Mérimée or Palissy notes²². The Italian translation of the descriptors was developed in partnership with the Istituto Centrale per il Catalogo e la Documentazione.

- **In the field of archaeology and antiquity: the “PACTOLS” thesauri**

PACTOLS is the acronym for “Peoples and cultures, Anthroponyms, Chronology, Toponyms, Works, Places, Subjects”. These thesauri are used by the network and database FRANTIQ which is a cooperative of Research Centres (CNRS, Universities, museums of the Ministry of Culture) and a common network of databases about Sciences of Antiquity from Prehistory to Middle Ages. It is supported by the Department of Humanities and Social Science (SHS) of the National Centre for Scientific Research (CNRS).

The PACTOLS thesauri are lists of terms selected and organised according to semantic relations (synonymy, antonymy, adjacency) and / or hierarchical (broader and narrower terms). These thesauri are poly-hierarchical (one narrower term can be linked to several broader terms) and multilingual. The vocabulary contains 25 000 lexical units spread in the six micro thesauri, among them 13 500 are geographical terms and only 4 500 are subject terms. In the current version the Subjects are fully translated in English and Italian and the Chronology is partially translated in those languages. Isolated terms are translated in German and Spanish. Within the framework of the DAPHNE project (Données Archéologiques Préhistoire, Histoire sur le Net) the translation of the Frantiq website in English is planned as well as a multilingual indexing of the union catalogue with the PACTOLS thesaurus notwithstanding sufficient financial and human resources. At present the online interrogation of the catalogue is available through the use a part of the French version of the PACTOLS thesauri. The full translation of the Subjects and the Chronology in the German language is planned too.

²¹ A description of the *Thésaurus de l'architecture* is available at : <http://www.culture.gouv.fr/documentation/thesarch/Othesaurus.htm>.

²² The newly developed catalogues of dated altars and dated chalices and patens link the four databases. These catalogues are available at : <http://www.inventaire.culture.gouv.fr/culture/inventai/presenta/bases-outils.htm>

- In the field of art works and museum objects: Museum images vocabularies**
 Museum Images is a picture library dedicated to the art works and objects of the museums worldwide. Museum Images photo agency delivers to the professionals in the publishing industry, the press, and the communication and advertising industry, digital images of the collections which are part of its catalogue or of any other museum through its picture research service. The vocabulary covers art, architecture, sciences, technology, and history. It is available in five languages (English, German, Italian, French, Spanish). The Museum Images Themes thesaurus contains between 1001 to 5000 terms and the Museum Images Artist Names vocabulary and the Museum Images Periods thesaurus between 501 and 1 000 each. The narrower / broader term and related term features are supported as well as other relations. The vocabulary is used for searching the Museum Images website.²³ It is commercially-priced and a reference to the copyright owner is required when the vocabulary is used.
- In the field of manuscripts and letters: the Malvine thesaurus**
 Between 1998 and 2001 the European Malvine project (Manuscripts and Letters Via Integrated Networks in Europe) aimed at building a network of European libraries, archives, documentation centres and museums that keep and catalogue post-medieval manuscripts and letters in order to offer new and enhanced access their collections. The Malvine database searches the local catalogues of these institutions and therefore facilitate data exchange. This low cost system is independent of the heterogeneous technical solutions used locally. Additionally Malvine enables users to provide feedback on catalogue records which can then be enhanced by library professionals at the relevant institution. The database uses its own metadata set based on Dublin Core. The Malvine vocabulary allows semantic interoperability and is available in five languages (German, English, French, Spanish, Portuguese).²⁴ It is composed of a closed list of terms used for describing manuscripts and organised in various categories such as Name, Title, Genre, Document type, Place of origin, Country of origin, ... One can search the catalogue through some of those. Search by subject is only possible about authors. The Malvine project was followed in 2001 by the LEAF (Linking and exploring authority files) project that concentrated on the development of a common European Authority File. The IMEC (*Institut Mémoire de l'Édition Contemporaine*) catalogue is available from the Malvine database.
- In the field of culture: the UNESCO thesaurus**
 The Unesco Thesaurus is a controlled and structured list of terms used in subject analysis and retrieval of documents and publications in the fields of education, culture, natural sciences, social and human sciences, communication and information. This trilingual thesaurus contains 7,000 terms in English, 8,600 terms in French and 6,800 in Spanish that are spread between seven major subject domains broken down into micro-thesauri. It is now possible search the online unesdoc / unesbib catalogue directly from the thesaurus. The thesaurus functions are Broader / Narrower Term, Used For, Related term, Scope Note, Descriptor, Non-Descriptor. A part of the UNESCO thesaurus may be used in the future for the French catalogue of cultural digital collections within the framework of the Michael project.
- In the field of libraries: the MACS project (Multilingual Access to Subjects)**
 The MACS project aims at providing a multilingual access to subjects in the catalogues of the participants. These are Die Deutsche Bibliothek (SchagWortnormDatei), The British Library (Library of Congress Subject Headings), the Bibliothèque nationale de France (Répertoire d'Autorité-Matière Encyclopédique et Alphabétique Unifié), and the Swiss National Library

²³ The Museum Images website is available at : <http://www.museum-images.com/>

²⁴ The Malvine thesaurus is partly available at : <http://www.malvine.org:8100/metasearch/thesaurus.jsp?type=thesaurus&lang=fr>

which was in charge of the SWD / RSWK project. No language is used as a source language in the MACS project. Each indexing language is autonomous but linked to the others by concept clusters. The RAMEAU language has been developed since 1980 in an autonomous way from the Quebec Laval university “Répertoire de vedettes-matières” (Laval RVM) that is itself a translation of the Library of Congress Subject Headings. Some English and French equivalents therefore already exist and this allows a search of some French library catalogues with the LCSH (Service Universitaire de Documentation, Lyons Local Library, ...) but this is not the case with the German language. In the MACS project the terms of the three lists (LCSH, Rameau, SWD) are analysed in order to determine whether they are exact or inexact linguistic equivalents. A MACS prototype is being developed by Index Data (Denmark) and Tilburg University Library (Netherlands) that uses the Link management Interface (LMI). This project is likely to be used in the TEL project (The European Library) which started in 2001.

- **In the field of cultural heritage and Euro-Mediterranean tourism: the STRABON thesaurus**

Strabon is a scientific and technical cooperation programme provided for three years (2002-2005) which aims at equipping the Euro-Mediterranean space with a multilingual and multimedia information system that comprises coherent units of digital resources regarding the Euro-Mediterranean cultural heritage and ethical tourism. The Strabon programme is coordinated by the Fondation Maison des Sciences de l’Homme (FMSH). Innovative solutions based on the most widely used international norms and standards such as OAI protocol, XML language, RDF, Dublin Core, SDX platform, ...) are implemented by Strabon in order to allow data sharing and a consistent indexing. These technologies essentially rely on open-source software. The software tools are developed by 4Dconcept. A thesaurus is under construction. Its development is dependent on the goodwill of the participants. The latter are free to cooperate and add new terms to the thesaurus at their own pace.

From the above overview of projects we can make out that thesauri are more and more conceived as part of complex systems in which information is searched through a combination of methods. Sophisticated systems such as SymOntoX²⁵ allow the management of several ontologies and reduce terminological or conceptual confusion through the definition of a common structure. One of the major challenges is the use of open-source software and open source content.

While the number of multilingual cultural websites is increasing, multilingual controlled vocabularies are still scarce and the works are slow to produce quality and coherence in these vocabularies.

Outlook

Beyond the obligation for French cultural institutions of offering multilingual content, needs are numerous and call for the implementation of a qualified offer.

Here are the most pressing needs:

²⁵ SymOntoX is a Symbolic Ontology Management System, XML based, developed at LEKS, Istituto di Analisi dei Sistemi ed Informatica – CNR. It is a prototypal software system based on the OPAL (Object, Process, and Actor Language) methodology for knowledge representation.

- Working on terminological standards production with a view to apply it in multilingual cultural projects;
- Accompany the implementation of technical platforms that manage and disseminate this high added linguistic value content;
- Integrating and developing this new kind of resources in the context of art education or education with a cultural content (e-learning, resource centre: <http://artsculture.education.fr/>);
- Extending reflection on multilingualism to sign language and Braille, and to the more general problem of cultural sites accessibility;
- Linking the different policies together: the policy of systematic dissemination of documents deriving from MINERVA working groups activity could be connected to a French proposal submitted to the European Commission. It proposes declaring machine translation of European interest by writing it down as a priority in the Social Sciences and Humanities chapter of the future 7th Framework Programme for research and development.
- Developing the linguistic coverage of websites and related tools, as well as new language experts for rare and minority languages.

2.4 GERMANY

2.4.1 Population and Languages spoken

82 million people live in the Federal Republic of Germany, which is the most heavily populated nation in European Union. 75 million inhabitants possess German citizenship and about 8 million people hold foreign passports. Approximately 15 million people do not speak German as their native language. The largest population of foreigners are the Turks (1.87 million), followed by Italians (0.62 million), immigrants from the former Yugoslavia (0.56 million), Greeks (0.35 million), Poles (0.32 million), Croatians (0.23 million), Austrians (0.18 million), Bosnians (0.16 million), Americans (0.11 million), Macedonians (0.06 million) and Slovenians (0.02 million).

National minorities, or in other words “groups of German citizens who have traditionally ... resided on the territory of the German Federal Republic and who live in their historic settlement areas“, include the Sorbs and Wends (60,000), the Danes (50.000), the Frisians (50.000) and the German Sinti and Roma. In accordance with the European Parliament’s European Charter of Regional and Minority Languages of 05 November 1992, they are protected and supported in the context of a “threatened aspect of European cultural heritage“. Protection includes the right to use a regional or minority language in the private and public spheres. At the same time, the charter includes the responsibility to facilitate or maintain the use of regional or minority languages. In 1994, a further regional language, Plattdeutsch (Low German), was recognised. According to the Law on Administrative Proceedings [Verwaltungsverfahrensgesetz § 23.1 (VwVfG)], Standard German has been designated as the official written and legal language.

In reality, linguistic and cultural diversity are significantly larger: in 2004, for example, 45.4 million overnight stays of non-German tourists were registered. In December 2004 in Berlin alone, the fourth largest city in Europe, approximately 450.000 foreigners with passports from 185 countries were registered.

2.4.2 The Survey in Germany

In accordance with the Constitution, the federal structure of Germany and the country’s history, the organization of cultural tasks mainly lies with the 16 Länder (states). There are relatively few cultural establishments coordinated by the Federal government, such as the State Library of Berlin (SBB) and the German National Library (DDB), the German Historical Museum (DHM), the House of History of the Federal Republic of Germany (HdG), the Federal Archives and the Secret Central Archives – Prussian Cultural Heritage (GstA).

There are networks among the Landes-museums, Landes-archives and university and special libraries that originate from former or current German Länder. There are six regional library associations and some forms of collaboration between them. They can be centrally accessed via the Karlsruhe Virtual Catalogue KVK (www.ubka.uni-karlsruhe.de), which also offers the possibility of researching many foreign library catalogues.

In 2003, a total of more than 6,000 museums, more than 10,000 public libraries, almost 1,200 scientific libraries and over 6.000 archives as well as a large number of other cultural establishments were maintained in Germany. The total number of cultural establishments can therefore be estimated at well over 25.000. Some establishments also serve jointly as an archive, library and museum.

The number of websites offering cultural information has not yet been counted or compiled into a central data pool. A study conducted by the Institute for Museum Research in 2001 found that more than half of the museums (3.221) published information on the Web. Of these websites, 84.4 % were monolingual. In the case of multilingual websites, 94.8 % used English as a second language, followed by French (16.8 %) and Dutch (4.5 %).

A questionnaire designed by the MINERVA Working Group “Multilingual Issues and Thesauri” was distributed (via e-mail and letters) by the Institute for Museum Research in April 2005 to cultural establishments and multipliers. It included an introductory note on the Minerva projects.

In total, responses were received from 137 establishments, 54 museums, 40 libraries, 21 archives and 22 other cultural establishments or projects. Libraries and museums were the bodies that sent the most responses, which fact could be attributed to these institutions compiling statistics on an annual basis anyway. In general, the interest in the survey was considerable; nonetheless, a number of establishments stated that they experienced difficulties in filling in the questionnaire, and particularly with the second part.

Reactions from institutions that responded but did not fill in the questionnaire indicate that many internet sites are currently being reworked in order to expand their multilingual presence. Thus, it is possible to use the survey to sketch a segment (but not a representative picture) based on the number of responses in comparison to the total number of cultural institutions.

Of the 132 documented websites, 43 are monolingual, 54 are bilingual, 16 are trilingual and 19 contain information in more than 3 languages. 67 % of the institutions, then, make available information in more than one language. 2 institutions provide information in 10 languages. 11 websites hold information in languages that are not spoken in the European Union. 95 % of the institutions with multilingual websites have translated their information into English. Following this, French (27 times) and Italian (16 times) was used. One institution also offered information in Latin.

There are different strategies for offering multilingual information. 24 of the 89 establishments translated basic information on their website, such as the profile of the institution or the purpose of the website. 34 institutions made available larger proportions of their website in at least one other language. 25 websites were almost completely translated.

Of the multilingual websites, almost 71 % made it possible *to navigate* in at least one other language. While some websites change in their graphical appearance when a different language is selected, in 68 % of the websites the layout of the website was independent of the language. With 33 % of the websites it was possible to switch between languages at any point.

Navigation tools to search the website were made available on 46 of the 89 multilingual websites: The options included a sitemap (26 times), free text search (29 times), a crumb trail (10 times), and an alphabetic index (9 times). 26 websites offered one or more of these functions in one or more non-German languages.

41 of the multilingual websites possessed at least one database. Of these, controlled vocabulary could be researched on 40 sites. On 20 pages, the search interfaces and the data field names were translated. 15 sites at least offered multilingual lists that were designed to support the search.

2.4.3 Thesauri and controlled vocabularies used

There are three widely available and electronic Authority lists exist for cataloguing in German libraries:

- **the Schlagwortnormdatei SWD (German Subject Headings Authority),**
- **the Gemeinsame Körperschaftsdatei GKD (German Corporate Headings Authority) and**
- **the Personennamendatei PND (German Name Authority).**

These are designed and maintained by the German Library DDB in cooperation with the different library networks, and are made available online within the framework of the Integriertes Literatur-, Tonträger- und Musikalien-Informationssystem (Integrated Literature, Sound Carrier and Music Information System) ILTIS via the Z39.50-Gateway.

(http://z3950gw.dbf.ddb.de/z3950/zfo_get_file.cgi?fileName=DDB/searchForm.html).

A few German museums use the German Subject Headings Authority SWD or establish links to it. The German Name Authority PND is being linked to other national Authorities via the Virtual International Authority File (VIAF) (<http://www.oclc.org/research/projects/viaf/default.htm>) to create one international Authority.

The MACS project (<http://laborix.uvt.nl/prj/macs>) has established links between three indexing languages used in national library services: the German Subject Headings Authority (SWD), the Library of Congress Subject Headings (LCSH) and the Répertoire d'autorité-matière encyclopédique et alphabétique unifié (RAMEAU) to facilitate multilingual access to library catalogues. A prototype developed by Index Data and the Tilburg University Library can be viewed at <http://laborix.uvt.nl/prj/macs/prototyped.html>.

The DDC-Deutsch project (<http://www.ddc-deutsch.de>) is translating the Dewey Decimal Classification system (DDC 22) into German to develop a tool for online catalogues that enables all titles classified with DDC to be accessible, particularly Anglo-American data. A series of projects or institutions are in progress. For example, the GVK – Gemeinsamer Verbundkatalog (Common Union Catalogue <http://gso.gbv.de>) uses the “Dewey Decimal Classification” link in the “Titeldatenanzeige” to conduct a systematic search via DDC. DDC notations do not exist for all titles, mainly for English language works. But since 2004, the German Library has classified all titles for the National Bibliography DNB according to DDC, it makes these available to the regional libraries for their own use.

A few libraries offer classifications that are partially translated on their websites, such as the Göttingen Online Classification GOK (<http://db1-www.sub.uni-goettingen.de/gok/index-e.html>) or the originally Dutch “Basis-Klassifikation”

(<http://sbbweb1.sbb.spk-berlin.de:8080/DB=1/LNG=EN/BCL>) along with PICA, which is made available by the State Library of Berlin SBB and mainly used in Lower Saxony and Saxony Anhalt. In the past, many different and individual solutions were created for researching single projects, especially in the museum and archive areas. These are mainly monolingual, sometimes only available offline and are often not visible to the ordinary web user.

Some museums use and maintain common Authorities by sharing data, with a rather large number of descriptors. In this context, for example, the mainly German language-based “Seitendateien” (Helpfiles) of Foto Marburg (www.fotomarburg.de) are implemented in cooperation with the MIDAS-Rules. The “Geo-Seitendatei” (Geo- side files) administers Polish and German geographic terms.

A larger number of art museums use the ICONCLASS notations for iconographic description, enabling multilingual access via the Internet if the correct technical, financial and legal prerequisites are in place.

(Iconclass in German <http://194.171.152.226/libertas/ic?style=index.xsl&taal=de>)

To date, only a few German museums use the Getty vocabularies: Thesaurus of Geographic Names TGN, the Union List of Artist Names ULAN or the Art & Architecture Thesaurus AAT.

2.5 GREECE

2.5.1 Population and Languages spoken

According to the 2001 survey of the National Statistics Agency the population of Greece consists of about 10.934.087 inhabitants. 99% are Greek and the other 1% is divided between about 5 major people groups that possess other citizenships. There are no languages or national minorities currently recognized in Greece. The only officially recognized minority is the religious minority of Greek Muslims in western Thrace.

Greek is the official written/spoken language and the vast majority of the population speaks Greek. However, some very small language groups speak other languages and dialects such as Romanika, Vlachika or Turkish.

2.5.2 The Survey in Greece

62 cultural web sites were evaluated for the MINERVA survey. This looked at multiple-language availability, search facilities and use of multilingual indexing and cataloguing structures such as vocabularies and thesauri. The web sites were evaluated by a team who requested additional information from people responsible for the sites when necessary.

There is a long recognized need for multilingualism, especially in cultural web sites and digital collections. The most important reason for this is the benefit of wider dissemination and promotion for Greek cultural and educational content. Multilingual support also appears to enhance marketing and diffusion of the Greek tourist product. This is also reflected in the fact that most Governmental web sites (ministries, national agencies etc) are at least bilingual (Greek-English) while the vast majority of cultural portals and cultural institutions sites are multilingual.

Nevertheless, the process of "going multilingual" encounters the following difficulties:

- achieving consensus on standardization and translation of domain terms and vocabularies, especially about the Greek cultural heritage and
- finding efficient technical means that ease concurrent authoring and presentation of the site interface and also the content itself and its description (metadata) in multiple languages.

Survey Results

The survey found that most web sites and on-line collections in Greece are multilingual; almost every site supports at least Greek and English. But it also found that there are currently only a few sites that support thematic vocabularies or thesauri. Some of them employ "free text indexing" by submitting queries to an underlying data base system. Generally they also offer structured navigation through their content but the "structure" does not reflect a standardized taxonomy. Only recently a major initiative has started to digitize cultural collections all over Greece and make them available through the Web possibly utilizing controlled vocabularies (the main guideline is to use the CIDOC-CRM ontology for describing artifacts). No concrete results are yet available from this project.

Of the 62 web sites included in the survey, more than a half (54.8%) were of well-known Greek museums, 25.8% belonged to libraries, 12.9% to cultural sites and 4% the web sites of digital archives. A significant majority (59.7%) present themselves in both the English and Greek languages and can be characterized as fully bilingual. Most web sites (67.7%) are available at least in English, while others give signs of work in progress, describing some of their resources in English. Museums appear to be most interested in working in this direction. Three or more languages are rarely seen; only two cultural institutions (3.2%) make their sites available in three

languages, one (1.6%) uses five and just one library makes content available in a total of seven different languages.

An important criterion taken into account during the survey was whether the websites provide *actual access* to digital cultural content or not. By this we mean, that the site should provide access to digital resources, like photos, video and so on, not just to textual information or metadata. Among the evaluated web sites, a relatively small percentage (51.6%) provides access to its digital collections. The majority of these sites belong to museums, which usually present photographs of their most significant exhibits. There were also some library websites that provide access to collections of digitized documents and other material.

2.5.3 Thesauri and controlled vocabularies used

Only a small percentage of the websites evaluated in the survey were found to use a thesaurus or taxonomies for thematic indexing. In 2001, Tsafou and Hatzimari reported that libraries in Greece made very little use of thesauri for the following reasons:

- Limited strength of their collections.
- Use of software developed outside Greece that does not support non-Latin alphabets.
- The absence of a national coordinating institution to undertake the development of suitable information processing tools.

Further reasons are the lack of development of appropriate thesauri for the cultural domain or of standardized translations of such resources.

Many websites (43.5%) provide a controlled vocabulary, either mono- or multilingual, as a means of describing and searching the available resources. Most of these vocabularies are proprietary, i.e. they are suitable for the documentation needs of each particular site and are not standardized. Translation into Greek of the International Standard for Archival Description (ISAD) by the Society of Greek Archivists (<http://www.eae.org.gr>) is an example of an effort towards standardization. It has been used for the on-line collection of the Hellenic Literary and Historical Archive (<http://www.elia.org.gr>).

Out of the sites that provide some means of structuring information (ranging from vocabulary to thesaurus) 63.3% maintain bilingual versions that become available when the interface language is selected by the user.

Only 3% of the websites included in the survey support and maintain multilingual thesauri. These are based almost solely on translations of well-known international standards and classification systems. The most prominent ones in use in Greece seem to be:

- LCSH. Translated versions of LCSH are used by the majority of Greek libraries. It is not always the case that there is concurrent multilingual use of LCSH, but bilingual examples include the Library of the Technological Educational Institute of Thessaloniki (<http://www.lib.teithe.gr>) (LCSH version 27) and the on-line catalogue of the Eugenides Foundation (<http://www.eugenfound.edu.gr>).
- SEARS: Translated versions exist but multilingual use of SEARS in Greece is rare. The Library of the Technological Educational Institute of Lamia (<http://www.lib.teilam.gr>) employs a bilingual version of SEARS for thematic indexing.
- NLG-LCSH: The National library of Greece (NLG, <http://www.nlg.gr>) used LCSH as the basis for developing a customized translation in Greek. NLG maintains this and makes it available to other libraries and institutions which are then able to adjust it according to their needs. The Public Central Library of Serres (<http://www.serrelib.gr/>) uses a monolingual version of NLG-LCSH blended with SEARS headings.

Although support for multilingual thematic indexing was found to be limited a twofold momentum towards overcoming this can be recognized: Cultural institutions and organizations show both

awareness and willingness to make their collections accessible to non-native speakers. There are the on-going efforts to offer some choice and guidance in multilingual description of digital cultural resources. Institutions seem steadily adapting to the multilingual challenge as a growing number enable multilingual access to their collections. This situation can only benefit from a tighter coordination at national and international level.

2.6 HUNGARY

2.6.1 Population and Languages spoken

Hungary has about 10,117,000 inhabitants. 97% of the population are Hungarian and the remaining 3% consist of 13 different nationalities: German, Roma, Slovakian, Croatian, Romanian, Ukrainian, Slovenian, Greek, Serbian, Polish, Ruthenian, Bulgarian and Armenian.

The official language, and the majority language, is Hungarian, which is part of the Finno-Ugric language family. There are another 5 million Hungarians in the surrounding countries as minorities, and scattered all over the world. The minorities of Hungary live scattered all over the country in small sporadic communities in a majority language environment. They are free to use their mother tongue, but due to strong assimilation the usage of minority languages is decreasing in social communications. The minority languages are mainly used in self-government, TV-programmes, schools and informal communication. Macedonian, Osetin and Yiddish are also spoken in Hungary, but the numbers of native speakers are very small. There is no education in these minority languages in Hungary.

The *Hungarian Act LXXVII on the rights of National and Ethnic Minorities*, was adopted in 1993, and it declares rights to national and ethnic minorities over their educational, linguistic and cultural affairs. The aim of the act is to further enhance the protection of minorities in Hungary, by providing cultural autonomy. Hungary signed (1992), ratified (1995) and implemented (1998) *European Charter for Regional or Minority Languages*.

2.6.2 The Survey in Hungary

Hungary, as the leader of the MINERVA Work Package 3 sub-group on multilingual issues and thesauri, decided to carry out the survey of multilingual websites and thesauri in 2004. An online questionnaire was created, based on an Israeli questionnaire that was then being used in Israel. The questionnaire was tested in Hungary in May 2004 and the international survey began in June 2004.

In Hungary, a short introduction about the MINERVA Project was sent via e-mail to mailing lists for professionals in the cultural area (libraries, museums, and archives). The highest response came from the libraries with 25 libraries, 6 archives, 6 cultural sites, 2 museums and 4 other institutions eventually participating in the survey.

40 Hungarian websites were registered in the survey. Of these websites, 16 are monolingual, 17 bilingual, 6 are available in 3 languages and 1 in four languages. 25 websites were available in English. The survey results show that multilingualism is still an issue for Hungarian cultural websites. Many websites are still monolingual. Bilingual websites are very common but more than two languages are rare. The second language on a cultural website is usually English, the third German and the forth French (but the latter is very rare) Minority language translations are rarely found.

Among 60 academic libraries in Hungary, 33 are monolingual, 24 are available in Hungarian and English with 3 of these sites also available in German translation. Of the 19 regional libraries, 14 websites are monolingual, 1 is bilingual, 2 are available in English and German and 1 in four languages (the website of the Somogyi Library: <http://www.sk-szeged.hu/english/>). Local public libraries' websites are usually monolingual; their contents are generally neither translated into English or any minority languages. But of the 9 digital libraries, 3 also have an English interface.

The survey revealed that Museum websites were much more likely to be available in more than one language. Although half of these websites are monolingual, there were also many bilingual and multilingual examples. From 60 museum websites, 11 were available in 3 languages, 1 in four languages and 1 in 8 languages (the website of the Embroidered Egg collection: <http://datan-datenanalyse.de/Tojas/index.html>). There did not appear to be any significant difference between the multilingualism of the regional and national museum websites. Of the 10 digital museums 4 also have an English interface also.

The survey revealed that Archive's websites are mostly monolingual with only a few being bilingual. The website of the National Archives of Hungary is available in 3 languages <http://www.mol.gov.hu/>. Only 1 regional archive website was available in 3 languages (the Archive of Pest County <http://www.pestmegyeileveltar.adatpark.hu>). The situation is similar with the websites of ecclesiastical archives, the majority are monolingual with only 1 is available with a bilingual interface.

2.6.3 Thesauri and controlled vocabularies used

Information retrieval tools were reported on only 21 websites with controlled vocabularies being used for searching databases via 6 websites. Two of these are monolingual (OSZK Thesaurus, WebKat Thesaurus), another two are bilingual (Library of Congress Subject Headings List, Thesaurus of Library Information Science) in English and Hungarian. The Hungarian Ecoinfo Thesaurus has also English and German versions, and the Hungarian Educational Thesaurus is available in French, English, and German. On 10 websites free text indexing is used for searching site content.

There are 59 thesauri available in Hungarian, but only about 35 have ever been used.²⁶

Multilingual thesauri include: Thesaurus of Energetics, Ecoinfo - Economical Thesaurus, Educational Thesaurus. The UNESCO International Thesaurus of Cultural Development is available in Hungarian, but it has never been used²⁷.

Bilingual thesauri include: Geological Thesaurus, Thesaurus of Library Information Science, and the Library of Congress Subject Headings List. There is only one thesaurus for museums, but it has never been used.

²⁶ Ungváry Rudolf: A tezauszokról: http://www.oszk.hu/hun/szakmai/tezausz/tezausz_oszk_hu.htm

²⁷ A kulturális fejlődés nemzetközi tezauszja : információkereső tezausz / [összeáll. Jean Viet ; ford. és bev. Dienes Gedeon] Budapest : Művelődéskutató Intézet, 1980.

2.7 IRELAND

2.7.1 Population and Languages spoken

The 2002 Census reported that Ireland has a population of some 3,917,203 inhabitants. There are two official languages: English and Irish. English is the most widely written and spoken language. But 42.8% of the population speaks Irish. The highest proportion of Irish speakers are amongst students in the 10-19 age group and in Galway County in the West of Ireland, which has 52.7% Irish speakers.

2.7.2 The Survey in Ireland

Until very recently, Ireland did not have a national strategy for the production of websites or parts of sites in any language other than English. However, the Official Languages Act 2003 will now change this situation. This legislation focuses on providing public services through the Irish language. All public bodies will be requested to provide any communications - including their websites - to the public in both English and Irish by 2006.

For the purpose of the Minerva Plus multilingualism survey, a quick scan of 50 Irish cultural websites was carried out. The results were as follows:

- 45 were mono-lingual websites
- 3 were bilingual websites (English and Irish). Two of these sites offered homepages or specific sections in Irish. One site (the National Archives: www.nationalarchives.ie.) offers translation of the full content into Irish apart from the search facility
- 2 were multilingual websites. One of these sites (the Marsh Library: www.marshlibrary.ie) makes the homepage available in 26 languages. The other site (Heritage Ireland: www.heritageireland.ie) makes full content available in 6 languages.

These results suggest that there is no demand for multilingual cultural web sites at present. However, as mentioned above, all national institutions will soon be required to support at least bilingual English/Irish websites. Furthermore, the profile is also likely to change very quickly in the future due to the increasing numbers of EU and other international residents in Ireland.

2.7.3 Thesauri and controlled vocabularies used

Although there is variety of controlled vocabularies and thesauri available to the English speaking community, the survey carried out for Ireland could not list any specific document/programme for the purpose of multilingual web sites.

2.8 ISRAEL

2.8.1 Population and Languages spoken

There are over 6.3 million inhabitants in Israel, the majority are Jewish with other religions and languages present. It is a multi-cultural country with various communities living in Israel - both Jewish (stemming from North Africa, Asia, Europe and America) and non-Jewish (Arabs: Moslems, Christians, Bedouins, Druzes).

Most cultural institutions strive to be bilingual in English and Hebrew with some including Russian and Arabic. Russian is supported as there has been a high immigration of Russians to Israel. In 2004, the Israeli government supported 994 cultural institutions and projects. These included 107 museums, 220 libraries, 4 archives and 327 educational facilities.

2.8.2 The Survey in Israel

The goals for the Israeli lexicon survey were as follows:

- To summarize surveys collected in 2004-5
- To summarize for Berlin the current state in Israel (Survey of 107 Cultural Heritage Institutions)
- International Jewish list – to survey all Jewish culture sites (Survey of 465 Jewish institutions worldwide)

The survey results were based on the 116 cultural institutions that fully or partially filled in the questionnaires. These institutions were as follows: 7 libraries, 34 archives, 17 museums, 36 education facilities, 22 service providers and government offices

75 cultural institutions websites were registered and reviewed in the survey. These included 4 libraries, 30 archives, 6 museums, 22 education facilities, 13 service providers and government offices. Good practice examples of websites include:

- MALMAD - Israel Center for Digital Information Services manages:
 - Israel Union Catalog (ULI) - Developed in 1991, the purpose of the Israel Union Catalog (ULI) is to provide a search tool for searching the online catalogs of libraries participating in the Israel Inter-University Library Network. The ULI contains over 4 million abbreviated bibliographic records. When accessed by means of a Web browser, the records contain links to the full bibliographic record in the catalogs of the holding institutions. Multilingual: Hebrew, Arabic and English. (<http://libnet.ac.il/~libnet/uli/uliinfo.htm>).
 - Israel Union List of Serials (ULS) lists almost 100,000 different serial titles, in all subject areas and in all languages, held in over 170 academic, public and special libraries and collections. The ULS is accessible via the Israel Inter-University Library Network by means of a Web browser or through a Telnet connection. Multilingual: Hebrew, Arabic and English. (<http://libnet.ac.il/~libnet/uls/ulsinfo.htm>).
 - Central List of Electronic Journals (ULE) list includes journals of academic interest which do not require a formal subscription. (<http://www2.tdnet.com/frames.asp>)
- Jewish National and University Library (JNUL) the National Library of the State of Israel, the National Library of the Jewish People, and the Central Library of the Hebrew University. The Library collects all material published in the country. These are accessible using Aleph. In addition, specific collections are presented online: Online Treasury of Talmudic Manuscripts, The National Sound Archives, Ketubbot collection, Talmudic and Mishnaic manuscripts, Ancient maps of Jerusalem, The Albert Einstein archives, Historical Hebrew

newspapers (from the late 19th and early 20th centuries). In preparation: Registers of Jewish communities in the Diaspora. The Aleph database allows bilingual searches, with results in Hebrew, Yiddish Ladino and European languages. The colourful online collections are monolingual. (<http://jnul.huji.ac.il/eng/>)

- Bibliography of the Hebrew Book, 1473-1960 The bibliographic database of over 80,000 books was published in 1994 on a CD-ROM with search capabilities. This project concentrates on books published in various Jewish dialects: Ladino, Judeo-Arabic, etc. Since 1995 work is carried out using the ALEPH computer system, which has facilitated the updating of the database and 15,000 new entries have been added. Registration required (<http://www.hebrew-bibliography.com/search/register.asp>)
- The Henrietta Szold Institute Database The mission of the Szold Institute, is to serve as the National Institute for Research in the Behavioral Sciences. The materials covered are in Hebrew, English and include books, articles, reports, conference proceedings, theses and dissertations, from 1976 onwards. Each entry contains full bibliographic information, index terms and abstracts in Hebrew. The database contains some 62,000 items. The materials referred to in this database can be found in the Institute's library. The Szold Institute has produced a CD-ROM containing three databases, including sophisticated search capabilities. The CD-ROM is updated semi-annually. The three databases: "Publications in Education and the Behavioral Sciences", "Research Tools" and "Rehabilitation Services in Israel" are marketed to libraries, schools, institutions and individuals. A bilingual thesaurus (in Hebrew & English) containing index terms in the fields of Education & Social Sciences was developed in order to facilitate subject indexing. (<http://www.szold.org.il/>, <http://www.snunit.k12.il/>).
- eJewish An initiative of the Jewish Agency for Israel. This registry contains a collection of resources related to Jewish matters and allows free text searches established by description of the resource collections. Includes advanced searches enabling the user to pinpoint requested resources by defining intersections for the different fields available in the registry: Author, Publisher, Category, Keywords, Type of resource, Audience, Language, Country. The eJewish Thesaurus is multilingual with five languages: English, Hebrew, French, Spanish and Russian. The Keywords used in the Registry of Jewish Internet Resources are part of a systematic attempt to establish a Controlled Vocabulary for Jewish Networking (Thesaurus). The Controlled Vocabulary for Jewish Networking contains over 2,000 terms. (<http://www.ejewish.info/>)
- The Aviezer Yelin Archives of Jewish Education in Israel and the Diaspora, School of education, Tel Aviv University– thesaurus on History of Jewish Education, Jewish schools, Educators. (<http://www.tau.ac.il/education/>)
- MOFET Institute For Teacher Education– Thesaurus of geographical names, 2 vols. (vol.1 - Israel; vol.2 - Foreign countries). Thesaurus is bi-lingual: Hebrew and English. (<http://english.macam.ac.il/info.html>)
- Jerusalem Virtual Library – The Academic Database on Historic Jerusalem. A joint project between Al Quds University and the Hebrew University of Jerusalem. Using Cambridge Research Technology's Open Shelf Product, material from Israeli and Palestinian archives and collections has been brought together in digital format. This database contains a complex thesaurus data retrieval mechanism that equates one word to many, e.g. "temple period" to "early roman". Also a unique index of keywords set up in a tree format. Book search results can be viewed as text or pdf files or as a bibliography citation. Monolingual controlled terms vocabulary (only English), although the website titles are trilingual (Arabic, Hebrew, English). (<http://www.jerusalem-library.org/>)
- Pro Jerusalem Society - This catalogue uses a monolingual search interface with a linear drop down on certain fields. Bilingual terms can be searched with a controlled vocabulary (English and Hebrew) (not parallel cells as the search for Talpiot and תיפלת gave different results), The

website titles are trilingual (Arabic, Hebrew, English). (http://sachlav.huji.ac.il/cgi-bin/jerusalem/advanced_search.pl, <http://sachlav.huji.ac.il/jerusalem/heb>)

- The Ben-Gurion Research Institute, Library and Archive – thesaurus on David Ben-Gurion, State of Israel, Diaspora, Holocaust, Israeli Wars, Israeli Society, Zionism. Monolingual search interface with multilingual search terms for its archive collection. (<http://bgarchives.bgu.ac.il/archives/archion/>)
- The Knesset – The Parliament of Israel. Their archives can be searched on the multilingual website in Arabic, Hebrew, English. Although completely trilingual, the website allows different search capabilities for each language (<http://www.knesset.gov.il>)
- The Moshe Dayan Center Bibliographical Database The Moshe Dayan Center for Middle Eastern and African Studies is an interdisciplinary research center devoted to the study of the modern history and contemporary affairs of the Middle East, focusing on the Arab world (including North Africa, Turkey and Iran) and Arab-Israeli relations. The Dayan Center has developed a bibliographical database of over 100,000 items, covering articles, pamphlets and occasional papers on all aspects of the Middle East, published in English, French and Arabic. (<http://www.dayan.org/framelib.htm>)
- Yad Vashem Library, Museum and Archive Yad Vashem was established in 1953 by the government of Israel as a memorial to the victims of the Holocaust and includes two central museums, exhibition halls, outdoor monuments, a library, a vast archival collection and the International Institute for Holocaust Research. The Yad Vashem Library is one of the largest collections in the world of published material dealing with the Holocaust and related topics, holding over 80,000 books and off-print articles, as well as almost 4,000 newspapers and journals (by title). The library catalog uses the ALEPH system, although it is not yet accessible through the ALEPH network. The Yad Vashem archives contain a Sapir database of over one million digitised “Witness Reports” which are now accessible online. (http://www.yadvashem.org/wps/portal/IY_HON_Welcome).
- Center for Computerized Research Services in Contemporary Jewry (CCRS) at the Avraham Harman Institute of Contemporary Jewry, Hebrew University. One of the primary activities of CCRS is the management of the Contemporary Jewry Database, a consortium of computerized bibliographical projects including catalogs of the unique materials housed at the Institute as well as listings of articles and books on 20th century Jewish life in communities all over the world. Over 50,000 items have been indexed, abstracted, annotated and registered via applications of the ALEPH programme designed for each project at the CCRS. Access to the database is through the ALEPH system of the Israel Inter-University network. The web site also accesses Oral History Department (OHD), The Steven Spielberg Jewish Film Archive, Catalog of Holdings (JFA) , Jewish Filmography Project (JFI) , Jewish Demography & Statistics Documentation Center (DMG) , Bibliography of Contemporary Jewry (JCJ) (<http://icj.huji.ac.il/archives.asp>)
- The Vidal Sassoon International Center for the Study of Antisemitism - The Felix Posen Bibliographic Project on Antisemitism, conducted at the Center, has as its long-term goal the production of a comprehensive bibliography of works on antisemitism throughout the ages. The Project has published printed bibliographies and offers access to its online database. The databases are accessible in Israel via Israel's university library network (ALEPH), and can be reached via Telnet (har2.huji.ac.il - username is SICSA) and through the Internet (<http://sicsa.huji.ac.il/bibsear.html>).
- The Central Zionist Archives (CZA) is the archives of the Zionist movement. It's records cover the years 1880-1970 and document the growth of the Zionist movement worldwide, the development of the Jewish Home in Palestine and various aspects of the history of the Jewish people in the last 120 years. In particular, the Archives aims to collect, preserve and encourage the use of the archives of the World Zionist Organization, the Jewish Agency, the Jewish National Fund and Keren Hayesod, as well as the archives of the World Jewish Congress and various other bodies. The CZA also holds the private papers of individuals

active in the Zionist movement and in the development of Palestine and Israel. In addition, the CZA houses over half a million photographs, 50,000 maps and plans, over 18,000 posters and announcements, a large collection of ephemera, 13,000 newspapers and periodicals, a library and a microfilm collection. Along with the Hebrew University, the CZA also runs the Steven Spielberg Jewish Film Archive, which houses over 3,000 film and video titles. (<http://www.zionistarchives.org.il/>) (<http://www.cet.ac.il/history/posters/search.new.htm> - the poster collection in a Hebrew search engine)

2.8.3 Thesauri and controlled vocabularies used

As a result of the survey, 30 institutional lexicons were identified and reviewed. These included: 9 archives (6 bi/multilingual), 8 libraries (7 bi/multilingual), 5 museums (4 bi/multilingual), 8 educational facilities (5 bi/multilingual). 17 of the 30 lexicons reviewed in the survey were available on line.

Another recent survey among the Israeli heritage community showed that institutions are using a wide variety of vocabularies while indexing and documenting. But these are internal tools and are not directly visible to the end user. These lists are shared by more than one institution:

BARCAT - Bar-Ilan Library Catalog גרבנטור המלש: דרועה (תע-בתכ) תירבעב מיאשונ תורתוכ - Bar Ilan University digital subject listing in Hebrew and English. This work is based on a translation and adaptation of Library of Congress Subject Headings

Israel Antiquities Authority Lexicon an archaeological classification system for research and the documentation of findings. "Truly Bilingual". Hebrew and English.

IMAGINE Thesaurus developed and used by the Israel Museum, Jerusalem, an encyclopaedic museum, with standards garnered from the VRA and the AAT, focused mainly on Jewish material culture. It is constructed of "legacy terms" and is multidisciplinary in its nature. The Israel Museum has benefited from the Israel Antiquities Authority lexicon, and has continued to work on the basis of their lists for certain archeological tables. The Israel Museum inaugurated the first multilingual bi-directional museum collections database; supporting fully both Hebrew and English. The Image Search Engine of the Israel Museum, Jerusalem (IMAGINE) was installed in June of 2004 and is used by curators, restorers, and the registrar's office.. A nationwide project is in the works to share the IMAGINE thesaurus with the 54 museums of Israel supported by the Department of Museums of the Ministry of Education.

2.9 ITALY

2.9.1 Population and Languages spoken

Italy has a population of 58,462,375 citizens (recorded on 31 December 2004), which includes 1,990,159 foreigners. Italian is the official language of the Republic, but there are several cultural and linguistic minorities.

Italian legislation (laws n. 482/1999 and n. 38/2001; effective decree of the President of the Republic n. 345/2001) states that the Italian Republic (according to article 6 of the Constitution) values minority languages. According to the law, the following languages and cultures are preserved and promoted: Albanian, Catalan, Croatian, French, Franco-provençal, Friulian, German, Greek, Ladin, Occitan, Slovene, and Sardinian. (this represents a population of 2,428,770 people). Law 482/1999 decrees, among other things, that these languages and cultures can be taught in schools, that official documents and acts are bilingual, and that the local language can be used for broadcasting information. This law doesn't take into account other languages that are commonly spoken in Italy among immigrant communities, such as Arab or Chinese.

Some of the protected languages are commonly spoken but not frequently written. Bilingual web sites are not common. The exceptions are related in particular to border populations that speak Italian as second language, i.e. the German speaking areas of Trentino-Alto Adige region and the French speaking Val d'Aosta, whose official web sites are frequently bi- or multi-lingual, in particular those ones of public bodies that by law have to provide bilingual information. For the same reason, to date, only four of the linguistic minorities in Italy are provided for with programmes broadcast by the national public broadcaster RAI: the French speakers of the Aosta Valley, the German speakers of South Tyrol, the Ladin speakers in the Dolomites and the Slovenian speakers of Trieste.

2.9.2 The survey in Italy

The MINERVAplus survey about multilingual thesauri in Italy was conducted on a sample of 23 institutions that filled in the questionnaire following the MINERVAplus call.

The answers gathered therefore represent a sample and are not statistically relevant, although the institutions involved belong to different fields of the cultural sector (museums, libraries etc.) and have different status (both public and private bodies).

Institutions participants to MINERVAplus survey:

Universities and research institutes	5
Preservation offices	4
Archives	3
Local authorities	3
Museums	3
Cultural projects	2
Libraries	2
Working groups	1
TOTAL	23

The analysis of the survey results revealed that 56.6% of the web sites of the Italian cultural institutions that took part in the survey are monolingual, although they contain much information that could be useful for foreigners, in particular tour itineraries. 39.1% of the web sites are

translated into English, 8.7% into other European languages as well (but only their main pages)). Details about the mission and the services of the cultural institution is usually given in foreign languages, but the databases that provide information about digital collections, tourism, library services and so on, are only in Italian. Only 4.3 % of the web sites considered in the survey were found to be fully translated into English on every single page.

Recent research showed that only 2% of the European citizens speak Italian as a second language. But this fact seems not to be taken into account enough in building cultural web sites. This definitely means that the Italian cultural institutions must become aware of the need for for multilingual information retrieval.

A further analysis about the 135 web sites of the museums, libraries, archives, and preservation offices of the Italian Ministry that are active at the moment, demonstrated that 25.2 % of them has multilingual options; furthermore, in many cases the information translated is only the basic one. The second language of the web sites is regularly English; only 5.9% of the web sites are translated into 3 or more foreign languages, and almost all of the idioms used are European.

2.9.3 Thesauri and controlled vocabularies used

The Central Institute for Catalogue and Documentation (ICCD) of the Italian Ministry for Cultural Heritage and Activities produces several mono- or multilingual controlled vocabularies for cataloguing purposes. They represent national standards for all cultural institutions (national, local or private) involved into the cataloguing of the cultural heritage. The domains covered are: architecture, art-history, archeological objects and sites, artistic objects, architectural areas. The ICCD presents 8 controlled vocabularies related to description of cultural areas, authors, artistic technique and artistic objects. Artistic objects (one of the most used) is available in Italian, English, German, French and Portuguese (with specific sections in other languages). The architectural areas vocabulary is available in Italian, English and French. All these vocabularies are available upon request.

Another important tool for multilingual classification for the iconography of western art, **ICONCLASS**, is available in Italian, English, German, French, and Finnish (www.iconclass.nl). The ICONCLASS vocabulary is free to use; the complete software is commercially priced.

In cooperation with the Canadian Heritage Information Network (CHIN), the Getty Information Institute, and the French Ministry of Culture, ICCD has also produced the Multilingual Thesaurus of Religious Objects, which is available in English, French, and Italian. It is available on CD-rom (http://www.iccd.beniculturali.it/servizi/testo_cd5.html).

ThIST (Italian Thesaurus of Earth Sciences), available in Italian and English, is maintained by the library of the national Agency for Environmental Protection and Technical Services (APAT); it covers the earth science domain and can be browsed on-line (opac.apat.it). This thesaurus complies with ISO 2788/1986 and is developed in cooperation with an international experts working group.

An Italian to English iconographic thesaurus, is maintained by Alinari in cooperation with the University of Florence. It contains about 8,000 entries organised in 61 classes alphabetically ordered (from Agriculture to Zoology). The system includes a geographic thesaurus, thesauri for Periods and Styles, controlled lists for Events, People, Authors (artists) and Photographers. The Alinari thesaurus is a work in progress. It has been translated into Spanish, German, and French for the European project Orpheus. The thesaurus can be purchased for use.

A working group on the semantic web, made up of experts of various fields (universities, W3C consortium, libraries, private companies), has developed an Italian to English glossary about e-learning, available on line at the URL <http://www.bdp.it/websemantico/>.

The Multilingual Thesaurus of Religious Objects, the controlled vocabulary for artistic objects, and the translation into Italian of the ICONCLASS classification, all produced by the ICCD.

2.10 LATVIA

2.10.1 Population and Languages spoken

In 2004, there were 2,319,203 people in Latvia according to the 2004 Year book published by the Central Statistical Bureau of Latvia.

The population of Latvia by ethnicity:

Ethnicity	Population 2004	Percent distribution 2004
Latvians	1359582	58,6
Russians	668887	28,8
Belarussians	89984	3,9
Ukrainians	59860	2,6
Poles	57227	2,5
Lithuanians	32045	1,4
Jews	9930	0,4
Roma	8420	0,4
Germans	3704	0,2
Estonians	2554	0,1
Other ethnicities	27010	1,1

The total number of national minorities is not particularly large in Latvia, and each minority group (except Russians) is relatively small. The biggest and most active communities are Russians, Poles, Lithuanians, Jews and Roma. The majority of people of foreign descent mainly (69.2%) live in the seven major cities of Latvia: Riga, Daugavpils, Jelgava, Jūrmala, Liepāja, Ventspils and Rēzekne. As in many other countries there are both types of minorities in Latvia – historical, traditional minority and immigrant minority; 16% of all minorities are historical, but 27% are immigrants.

62% of Latvia's residents recognise Latvian as their native language. According to the legislation (from 1989) the official language of the Republic of Latvia is Latvian.

Cultural institutions in Latvia

There are four categories of cultural institutions in Latvia: libraries, archives, museums, other institutions.

There are 125 State and Local authority museums in Latvia in 2004. This includes 21 branch-museums; 25 State museums in the jurisdiction of the Ministry of Culture; 11 State Museums in the jurisdiction of other Ministries; 89 Local Authority Museums; and 7 accredited private museums.

Archives in Latvia were successfully developing as a joint system. Today the system consists of: Latvia State Historical Archive; State Archive of Latvia; Latvia State Archive of Audio-visual

Documents; State Archive of Personnel Files; 11 Regional State Archives; the Archival Inspection, Conservation Laboratory and the Archival Training Centre and Library. Work is carried out under the supervision of the Directorate General of Latvia State Archives.

There are 2119 libraries in Latvia in 2003 including: Latvian National Library; Latvian Academic Library; 892 public libraries; 55 special libraries; 32 higher education institution libraries; 1017 school libraries and 121 professional education institution libraries.

2.10.2 The Survey in Latvia

The survey in Latvia was carried out by studying websites via the Internet.

The Museums Portal (www.muzeji.lv) provides brief information about 134 museums and branch-museums in three languages: Latvian, English, Russian. Only 15% of Latvian museums (19) have their own websites, however 68% of these are multilingual. 3 websites provide information in three languages – Latvian, English and Russian (16%), 10 websites are bilingual providing content in Latvian and English (16%) and 6 museum websites are monolingual (32%) of these 5 of them are available in Latvian and 1 only in English.

The Archives Portal (www.arhivi.lv) provides information about the Latvian Archives System in three languages Latvian, English, Russian.

Library websites were divided into two groups with different user profiles and the groups were evaluated separately. The group consisted of Academic or Education Institution Libraries and Public libraries.

The survey looked at 30 websites of Academic Libraries or Education Institution Libraries. Nearly half of these websites are monolingual (14 or 47% of all websites), of these websites 12 are available in Latvian (40%) and 2 in English (7%). 15 of the websites were bilingual, with 12 providing information in Latvian and English (40) and 3 providing information in Latvian and Russian (10%). Only 1 website provides information in three languages Latvian, English and Russian (3%).

In addition to these Academic Library websites, the survey looked at 18 Public Library websites. The majority were found to be monolingual (15 or 83%); 3 were found to be bilingual sites although 12 websites provided some information in Latvian and English.

There are some other institutions in Latvia whose websites provide cultural content. These include the Artificial Intelligence Laboratory (<http://www.ailab.lv/>), the Latvian Institute (<http://www.li.lv/>) and the Archives of Latvian Folklore (<http://www.lfk.lv>). All of these websites provide information in two languages: Latvian and English. The Cabinet of folksongs (www.dainuskapis.lv) website provides Latvian songs in Latvian.

2.10.3 Thesauri and controlled vocabularies used

The survey found that:

Museums in Latvia use local developed classification schemes in Latvian and the Art & Architecture Thesaurus (AAT) in English.

Archives use the UKCAT thesaurus in English.

Libraries use four principal vocabulary tools:

- UDC classification in English (this is being translated into Latvian),
- MeSH in English and Latvian (part translation),
- LCSH is used as the basis for developing a partly adapted translation in Latvian,
- AGROVOC in English

2.11 MALTA

2.11.1 Population and Languages spoken

The total population of was 399,867 in 2003. Malta consists of three inhabited islands: Malta, Gozo and Comino and two uninhabited islands, Kemmaunet and Filfla. The largest island is Malta, which had a population of just over 388,867 in 2003. Circa 99% of the population are Maltese, and the remaining 1% consists of foreigners working in Malta or a few foreign residents who have retired. Besides the main islands, there are others.

With an area of 315.590 square kilometres, Malta has a population density of 1,257 persons per square kilometre, which is the highest in Europe. As a result of emigration, especially during the 1950's and 1960's, there are a good number of Maltese communities abroad. The major ones are in Canada and Australia with important Maltese communities in the UK and the USA. Earlier migrations can also be traced in Algeria and Tunisia.

On 21st September 1964, Malta became a sovereign and independent nation within the Commonwealth. Ten years later, Parliament enacted important changes to the constitution and on the 13th December 1974, Malta was declared a Republic within the Commonwealth.

The official languages of Malta are Maltese and English, Maltese being the native language and also the majority language. Other commonly spoken languages in Malta are Italian, French and German, with Italian being by far the most popular amongst these three. In the early 1900's, Italian was the favoured language, especially by the cultured classes and the Maltese aristocracy; more than the English language or the native Maltese tongue.

Fundamentally, Maltese is a Semitic tongue, the same as Arabic, Aramaic (the language spoken by Jesus), Hebrew, Phoenician, Carthaginian and Ethiopian. However, unlike other Semitic languages, Maltese is written in the Latin alphabet with the addition of special characters to accommodate certain Semitic sounds. Nowadays there is much in the Maltese language today that is not Semitic, due to the influence from a succession of (Southern) European rulers through the ages.

The *Maltese Language Act V* of 2004, Chapter 470 of the Laws of Malta established the National Council for the Maltese Language in order to promote the National Language of Malta and to provide the means of achieving this aim.

2.11.2 The Survey in Malta

Malta carried out a survey on multilingual websites and thesauri in 2005. This survey analysed websites relating to Culture. The groups were subdivided into two categories: Governmental and NGO's.

The Cultural websites, which were surveyed, are the following (in alphabetical Order):

- Din l-Art Helwa
- Fondazzjoni Wirt Artna
- Heritage Malta
- Malta Centre for Restoration
- Malta Council for Culture and the Arts
- Malta Society of Arts, Manufactures & Commerce
- Malta Tourism Authority

- Manoel Theatre
- Mediterranean Conference Centre
- Ministry of Tourism and Culture
- National Orchestra
- St. James Cavalier
- Superintendence of Cultural Heritage

2.11.3 Thesauri and controlled vocabularies used

Multilingualism and thesauri in Maltese websites is still an issue. The survey analysed 13 websites in total. It found that the Maltese language does not feature anywhere on Maltese Cultural website except for the Ministry's Website (where a number of Minister's speeches are carried out in Maltese). All of the 13 websites are based in English this being the language understood by a very high percentage of the Maltese population. 12 out of the 13 websites are monolingual, available only in English. The survey found only 1 multilingual website but this site did not include Maltese as it is targeted mainly for tourists rather than the Maltese population.

Heritage Malta is projecting to have its websites based on best practices in a few months time with its cultural content being professional. So far, the website is monolingual but is moving towards multilingual content at least in another 4 languages including Maltese.

2.12 THE NETHERLANDS

2.12.1 Population and Languages spoken

The Netherlands has about 16,300,000 inhabitants. There are two official languages: Dutch (*Nederlands*) and Frisian (*Frysk*). Both languages belong to the West Germanic language family. Frisian is spoken by some 400,000 people, mainly in the northern province of Friesland (*Fryslân*), where official/administrative documents are published in both Frisian and Dutch. The Dutch language is also spoken by the Flemish community in Belgium and in the former Dutch colony of Surinam. The total number of people for whom Dutch is the native language is estimated at 22 million. The official organisation for the Dutch language is the *Nederlandse Taalunie* (the Dutch Language Union), in which the governments of Flanders, Surinam and The Netherlands participate.

According to the leading theories, there are 28 dialects of the Dutch language in The Netherlands and Flanders (<http://www.ned.univie.ac.at/publicaties/taalgeschiedenis/nl/dialkarte.htm>). Some of the Lower Saxon dialects (*Gronings*, *Drents*, *Stellingwerfs*, *Sallands*, *Twents*, *Veluws* and *Achterhoeks*) and *Limburgs*, the dialect spoken in the southern province of Limburg are recognized as regional languages in The Netherlands.

People of many nationalities live in the Netherlands. In 2004 the city of Amsterdam counted 171 nationalities among its inhabitants. There is almost as much variety of languages spoken, especially in the major cities where most immigrants have settled. The majority of the immigrants come from the Mediterranean (Turkey (357.911) and Morocco (314.699) and from the former Dutch colony of Surinam (328.312; source: *Statistics Netherlands*, www.cbs.nl). In order to improve their opportunities in Dutch society, immigrants are encouraged to learn Dutch, but in spite of this official policy Turkish, Arabic and Tamazight (or Berber) have developed into *de facto* minority languages. In the major cities the municipalities publish much of their information in these languages as well.

Dutch economy depends largely on international trade. In addition, The Netherlands is a small country surrounded by powerful neighbours. As a consequence the country needs to maintain a strong international orientation. In secondary schools, English is a mandatory subject, while most students also learn the basics of French and German.

The Dutch take it for granted that cultural institutions with a substantial number of visitors from abroad will provide these visitors with enough information in the most relevant languages to help most of them out during their physical or virtual visit. There is, however, no official policy for multilingual access to culture in the Netherlands. This is perceived as the responsibility of the individual institutions.

2.12.2 The survey in the Netherlands

A website survey was carried out as a quick scan of the web sites of 52 Dutch organisations that preserve and present cultural heritage. There are approximately 2000 cultural institutions in the Netherlands, and at least 50% have their own website. The surveyed group of institutions can be seen as the front runners in the application of ICT. But in general they offer a fairly representative image of the Dutch heritage institutions, bearing in mind two limitations:

- the overall multilingual accessibility of digitized resources within this group of sixty is possibly somewhat better than in the rest of the heritage community;
- libraries are underrepresented, museums over represented (we'll broaden the survey next time).

The institutions were grouped in five categories: museums, libraries, archives, other cultural institutions and hybrid institutions (combining several functions (e.g. museum and archive, archive and library); included because of their important place in the heritage community).

The majority of the Dutch cultural institutions are interested in presenting themselves in more than one language. Many of their website show signs of work-in-progress with announcements of pages or resources in other languages being under development. Just over 70 % of the test group (37 institutions) has web pages in English, ranging from a simple introduction to a fully bilingual site. Museums, libraries and the 'hybrid' institutions are apparently trying harder: a majority offer more or less bilingual sites or have substantial parts of their sites in English. This is no surprise, museums as a rule aim their communication policies at a broader and international public. The other high scores in this area are mainly the leading institutions in the field of the libraries and scientific research in the humanities.

Only a small minority, seven institutions or about 13 %, had pages in languages other than Dutch or English. The information was mainly limited to introductions and highlights, with two exceptions:

- the web site of the archive of the province of Fryslân offers a full version in frysk, the regional language;
- the [Anne Frank Museum](#) (or *Achterhuis*) has a site with complete language versions in Dutch, English, German, French, Spanish and Italian.

The first survey was carried out in 2004 with the results being updated a year later. An overview of the results as per May 2005 follows:

	All	Museums	Libraries	Archives	Other	Hybrid
Total no. of surveyed institutions	52	26	3	8	8	7

with:

English content on site	37	18	2	3	8	6
full English version of site	10	8	0	0	0	2
substantial English	18	7	2	2	4	3
some English	9	2	0	1	4	2
Multilingual content	7	5	0	1	0	1
Dutch content only	15	8	1	5	0	1
Free text searching	39	19	1	5	7	7
More search aids	15	9	1	4	0	1

In percentages:

English content on site	71.2	69.2	66.7	37.5	100.0	85.7
full English version of site	19.2	30.8	0.0	0.0	0.0	28.6
substantial English	34.6	26.9	66.7	25.0	50.0	42.9
some English	17.3	7.7	0.0	12.5	50.0	28.6
Multilingual content	13.5	19.2	0.0	12.5	0.0	14.3
Dutch content only	28.8	30.8	33.3	62.5	0.0	14.3
Free text searching	75.0	73.1	33.3	62.5	87.5	100.0
More search aids	28.8	34.6	33.3	50.0	0.0	14.3

Updating the results gave us the opportunity to look at trends. In general, heritage institutions seem to be working on the expansion of their service to English-speaking visitors. In 11 cases (of the 52) these improvements were substantial, compared to the results of June 2004. There were no substantial additions to pages in other languages.

2.12.3 Thesauri and controlled vocabularies used

A recent study among the Dutch heritage community showed that institutions use a wide variety of controlled vocabularies while indexing and documenting internally, but these tools are not visible to the end user of the websites.

Most search tools for the public are either based on full text searches or on query by form. Vocabulary aids are limited and mainly offer support in the form of a list of available indexing terms. Fourteen sites in the survey group (some 27 %) offer controlled vocabulary/thesaurus support to the end user.

The most important vocabulary tools accessible on line are:

- **AAT-NL:** a translation in Dutch of the Art & Architecture Thesaurus of the Getty Institute, maintained by the Rijksbureau Kunsthistorische Documentatie/ Netherlands Institute for Art History, which is becoming a standard vocabulary in Dutch (and Flemish) museums. When the technical development is ready, a bilingual thesaurus will be available as an indexing and search aid (cf. <http://www.aat-ned.nl/index.html>).
- **Ethnographical thesaurus:** developed and used by the Dutch ethnological museums as an extension of the AAT, which is focused mainly on Western material culture (cf. <http://www.svcn.nl>).
- **RKDartists:** a standardised list of about 200.000 names and details of artists, maintained by the Rijksbureau Kunsthistorische Documentatie/ Netherlands Institute for Art History, which will also become a standard vocabulary for the Dutch museum community (cf. <http://www.rkd.nl/rkddb/default.asp?database=ChoiceArtists&action=form>).
- **Iconclass:** an international classification system for iconographic research and the documentation of images (cf. <http://www.iconclass.nl/>).

A more comprehensive list of the available tools is under construction (cf. <http://www.den.nl/Leidraad/AccessDatabs/Terminologiebrn.pdf>)

Vocabulary support for the non-Dutch speaking end user is very rare. Sites of many institutions offer search pages and some support in English, but except for the major and internationally renowned institutions (like the Royal Library, the International Institute of Social History, the Rijksmuseum) in most cases the end user will have to enter search terms in Dutch. Truly multilingual functionality is not yet offered by the first three tools mentioned above. Only Iconclass has a proven track record of multilingual access.

2.13. NORWAY

2.13.1 Population and Languages spoken

Of Norway's population of 4,606, 363 (on 1.1.2005) 95 per cent speak Norwegian as their native language. Norway has two official written languages, Norwegian and Sámi. But Norwegian is really two different languages Bokmål (Dano-Norwegian) and Nynorsk (New Norwegian). Everyone who speaks Norwegian, whether it is a local dialect or one of the two standard official languages, can be understood by other Norwegians. However, the minority Sámi language is not related to Norwegian and it is incomprehensible to Norwegian speakers who have not learned it.

The two Norwegian languages have equal status, i.e. they are both used in public administration, in schools, churches, and on radio and television. Books, magazines and newspapers are published in both languages. The inhabitants of local communities decide which language is to be used as the language of instruction in the school attended by their children. Officially, the teaching language is called the *hovedmål* (primary language) and the other language the *sidemål* (secondary language). Students read material written in the secondary language and at the upper secondary level they should demonstrate an ability to write in that language. This is a consequence of the requirement for public employees to answer letters in the language preferred by the sender.

During the 1995-96 school year, 398,150 pupils in primary and lower secondary schools listed Bokmål as their main language, while 79,104 listed Nynorsk. The primary language of all cities is Bokmål; the same applies to the relatively thickly populated areas surrounding the Oslo fjord and the lowlands of Eastern Norway. Nynorsk dominates in the communities lining the fjords on the west coast of Norway and in the mountain districts of inland Norway. The rules regarding the selection or possible change of a school's teaching language are established by law.

While the percentage distribution of the two languages in the schools has been fairly stable over the last 15 to 20 years, this does not mean that perfect peace and harmony prevail between the two tongues. From the percentages claimed by the respective languages, it is clear that Bokmål dominates, as it always has done. Bokmål is the language of choice of the major newspapers, the weekly magazines, and paperback novels. Because the cities and most industrial areas use Bokmål to train new employees, the language prevails in business and advertising. Bokmål was developed from the form of Danish that was freely spoken by government officials and by leading social circles in the cities; it therefore had the prestige of being the preferred speech of people with higher education and aspirations. It has the same function as normal speech in other countries, as well as serving as a status symbol.

Nynorsk has the upper hand in districts where the population is stable and most speak their traditional local dialect. Normalized Nynorsk is hence usually not the spoken language in the local communities where it is the teaching language and is mainly used in places where the inhabitants hail from different parts of the country.

Norway has a law that regulates the use of language in public services. The Language Usage Act may be summed up as follows:

- Private individuals and other private legal persons shall receive responses in the language (Bokmål or Nynorsk) they use when addressing a State agency.
- Municipalities and counties may decide to require Bokmål or Nynorsk in the correspondence they receive from State agencies, or they may decide to remain linguistically neutral.
- The so-called civil service language of a lower administrative level in the State shall determine the form used at a higher level to handle correspondence between them, for

example, and the civil service language in turn is based on the municipality's choice of language.

- State agencies shall generally alternate between the two languages in the documents they produce for the public, i.e. everything from parliamentary documents, books and magazines to stamps and bank notes, so that neither language is ever used less than 25 per cent of the time. This also includes websites.

4.375 books were published in Norway in 2003. Of these, 4 652 was published in Bokmål (Dano-Norwegian), 460 in Nynorsk (New-norwegian), 1 in the Sámi language and 530 in other languages.

Minority languages in Norway

Norway is implementing the provisions of the European Charter for regional or minority languages. The languages recognized as regional or minority languages in Norway, thus granted protection by the Charter; are the Sámi language, the Kven/Finnish language, and the Romanes and Romany languages.

There is no agreed total number of inhabitants with an ethnic minority background in Norway, since there are no statistics on ethnic affiliation. According to estimates there are approximately 10,000 – 15,000 Kvens, 1,500 – 2,000 Jews, a few hundred Skogfinns (the Finnish speaking population living in the vast forestland near the border to Sweden), 2,000 – 3,000 Romanies (Travellers) and 300-400 Romas (Gypsies). The figures reflect the number of people who claim they belong to the minority group, and not necessarily those having a fluent command of the language.

The Sámi language is the language of the indigenous Sámi population. The Sámi language in Norway includes four major languages, North Sámi, South Sámi, Lule Sámi and East Sámi, with varying degree of similarities between them. The majority of the Sámi population speaks the North Sámi language. The Sámi people are a North European ethnic minority group and the indigenous population of the vast open areas of northern Norway, Sweden Finland, and the Kola Peninsula in Russia. It is estimated that approximately 25,000 people in Norway speak the Sámi language (a language usage survey was completed by the Sámi Language Board in October 2000). According to the findings, 17 per cent of the respondents claimed they were Sámi speakers, which the survey defined as being able to understand Sámi well enough to take part in a conversation conducted in Sámi.

The Kven/Finnish language has been recognized as a minority language in Norway. The migration and settlement of the Kvens in Norway is part of a history of extensive colonization by Finnish peasants, almost a mass exodus from the old agricultural communities of Finland and northern Sweden, which took place from the 16th century up until the first half of the 19th century. Later in the 19th century modern labour migration followed on a larger scale.

The Kven/Finnish language is spoken in Troms and Finnmark, the two northernmost counties of Norway.

In Norway Romanes has been recognized as a non-territorial minority language. Romanes is the language of the Roma ("Gypsy") minority in Norway. Approximately 400 people of Romanes descent have lived in Norway during the last decades, mainly in the Oslo area. Generally, it is assumed that they all have Romanes as their mother tongue. During the last decade, some Romas have come to Norway as refugees from Bosnia and Kosovo.

Romany has been recognized as a non-territorial minority language in Norway, and is granted protection under Part II of the Charter. Romany is the language of the Romany people (or the so-called "Travellers"). This minority group has lived in Norway for several centuries.

About 7.3% of Norway's population have an immigrant background, mostly from Africa and the Middle East. 6, 3 % of the pupils in school belong to language minorities. 5, 9 % of the children in kindergartens have a mother tongue other than Norwegian, Swedish, Danish or English. Approximately 1/3 of them are getting bi-language assistance. The dominating immigrant languages are Albanian, Arabic, Hindi, Kurdish, Persian, Portugese, Somali, Spanish, Swahili, Tamile, Turkish, Hungarian, Urdu and Vietnamese.

2.13.2 The Survey in Norway

The survey found that most major cultural institutions in Norway have websites with information in English. The Norwegian culturenet which launched a new version in 2004 based on Topic Map, will probably launch an English version next year.

2.14 POLAND

2.14.1 Population and Languages spoken

According to recent statistics Poland is inhabited by 38,230,000 people. About 251,000 (6%) of the population are the members of national and ethnic minorities. Among these the biggest minorities are: German (147.000), Belarusian (47.000), Ukrainian (27.000), Rumanian (12.000), Lemkan (5,800), Lithuanian (5,600), Russian (3,200), Slovak (1,700) and Jewish (1.000). Other, smaller minority groups include Tatar, Czech, and Armenian. In the near future other minorities will probably be identified as a growing number of immigrants from a wide range of countries are applying for Polish citizenship.

The Polish Constitution guarantees minorities members special rights, such as protection and development of their own culture and language, the right to establish educational and cultural institutions and the right to participate in the decision making process, concerning national identity. Children from the biggest minorities may learn their mother tongue language at public schools, situated in the regions settled by those minorities. The most active minorities have established associations, publish newspapers and organize cultural and scientific events. The biggest minorities – Belarusian and German, also have representation in the Polish Parliament.

Cultural institutions

According to the Central Statistics Office, last year there were the following number of cultural institutions registered in Poland: 31,150 libraries (1,200 research; 8,700 public; 350 teaching; and 20,900 school libraries); 650 museums; 212 archives with public access and 5,635 state archives with limited access, and 4,583 archives of local government bodies and 300 galleries. There are also other cultural institutions such as publishing houses, theatres, associations and non-governmental institutions which were not taken into account in this research.

2.14.2 The Survey in Poland

Preliminary surveys have been conducted in Poland since 2004. These were based on published guidelines, Google and www.Onet.pl search. Additional information has been collected on the Internet portal www.Culture.pl, the Polish Ministry of Culture (<http://www.mk.gov.pl/website/index.jsp?catId=8>), The Polish Librarians Association (<http://ebib.oss.wroc.pl/sbp/>), The Head Office of State Archives (<http://www.archiwa.gov.pl/>), EBIB (Library Electronic Information Bulletin - ebib.oss.wroc.pl/) and other websites.

As a result of these surveys 649 websites were identified belonging to 344 libraries (50 research; 147 public; 72 teaching; and 75 school libraries); 200 museums; 44 archives; and 61 galleries. The survey showed that most Polish cultural institutions don't have their own websites yet. Most of the identified websites offered only information about the location, activities, staff and resources of the institutions. Only 8 institutions (7 libraries and 1 archive), make their resources available on the Internet in digital form. Another 13 libraries publish their resources in digital form on CD-Roms accessible on site.

To evaluate the websites that were identified short usability tests and heuristic evaluations were carried out. These evaluations found that 149 cultural institutions present their activities in foreign languages as follows: 41 libraries (30 research; 9 public; and 2 teaching libraries); 66 museums; 16

archives; 26 galleries. The most common foreign language is English, but German, French, Russian, Italian, Ukrainian and the Czech language were also found. The results break down as follows:

- Research libraries – 30 websites of which 29 websites were in English only and 1 website was in English, German and French.
- Public libraries – 9 websites of which 7 websites were in English only, 1 was in German only and 1 in French only.
- Pedagogical libraries – 2 websites of which 1 website was in English only and 1 in English, German, French and Russian.
- Museums – 66 websites of which 40 websites were in English only, 1 was in German only and 25 websites were in more than one foreign language apart from English (25 in German, 4 in Russian, 8 in French, 1 in Italian).
- Archive – 16 websites of which 10 websites were in English only, 2 were in German only and 4 websites were in more than one foreign language apart English (2 in German and 1 in Russian, French and Ukrainian).
- Galleries – 26 of which 20 websites were in English only, 1 was in German only and 5 were in more than one foreign language apart English (5 in German and 1 in French and Czech).

Most of the multilingual websites of Polish cultural institutions present only basic information in a foreign language. This information includes addresses, contact data, description of activities and resources described. Other information such as rules and regulations and announcements are usually not translated.

An estimated 45% of information was translated from Polish into a foreign language on average. In details it breaks down as follows: Research libraries - 65%; Public libraries – 56%; Teaching libraries – 25%; Museums – 62%; Archives – 44%; Galleries – 63%.

2.14.3 Thesauri and controlled vocabularies used

A majority of cultural institutions websites in Poland do not offer any search mechanism. Information can be selected from the menu. Just nine institutions were found to offer an advanced information retrieval mechanism. Among them there were 6 libraries and 3 museums. They offer free text search (5), Google browser search (3) and controlled vocabulary (1).

The 6 Research Libraries were:

- Wrocław University Library (www.bu.uni.wroc.pl), searching in English – Google browser;
- The Ossoliński National Institute (www.oss.wroc.pl), searching in English – Google browser;
- Poznań University of Technology – Main Library (www.ml.put.poznan.pl), searching in English – Google browser;
- The Central Library of the University of Gdańsk (www.bg.univ.gda.pl), searching in English – free text;
- University Library in Toruń (www.bu.uni.torun.pl), searching in English – free text;
- Technical University of Lodz – Main Library (www.bg.p.lodz.pl), searching in English – free text;

The 3 Museums were:

- Memorial and Museum Auschwitz – Birkenau in Oświęcim (www.auschwitz.org.pl), searching of the Death Books in English and German – controlled vocabulary;
- The Museum of Kurpiowska Culture (www.muzeum-ostroleka.art.pl), searching in English – free text;
- Wawel Royal Castle (www.wawel.krakow.pl), searching in English – free text;

Library on-line catalogues listed on the websites

Since 1990s a growing number of on-line catalogues have become available on library websites. The most important are two central catalogues: NUKAT (<http://www.nukat.edu.pl/>) and KARO Distributed Catalogue of Polish Libraries (<http://www.nukat.edu.pl/>). There are a further 10 library on-line catalogues with interfaces in English.

Information retrieval at the majority of Polish on-line catalogues and the two central catalogues includes the Library of Congress Subject Headings (LCSH) system. LCSH has been translated from English through French RAMEAU so in theory it should be possible to search those catalogues in three languages.

2.14.4 Summary and conclusion

The number of websites is systematically growing in Poland and their functionality is improving. However the situation is still far from ideal as only 649 (2%) Polish cultural institutions have websites; 149 (22%) of those with websites created have multilingual versions; 106 (80%) of the multilingual websites offer only one foreign language version (99 (93%) of these in English, 6 in German and 1 in French; 29 (20%) of the websites have more than one foreign language version; on average 45% of information is translated into foreign language; only 11 (7%) multilingual websites offer search mechanism in foreign language.

This report briefly presents research on the Polish multilingual websites conducted over one year. During this time no visible progress in the number or quality of the websites was observed. To develop the Information Society in Poland it is necessary to create appropriate conditions for the development of cultural institution's websites, especially in respect of multilinguality. Some motivation is required and some help.

An award would motivate Polish cultural institution such as a European Certificate for Quality Websites within the MINERVA framework. To receive a Certificate a website should be designed in line with the requirements defined in the MINERVA 10 Quality Principles.

The basic and most important help is financial support covering software, hardware and work expenses. Thus help should be offered by the Ministry of Culture and local authorities. Other forms of help should include training and design. Cultural institutions could be supported by the National Library and the International Centre for Information Management Systems and Services in cooperation with "Concept" enterprise. Once established the template could be used by many small cultural institutions with similar functions and needs but who are unable to create a good website on their own. Structural funds could be used for that purpose.

2.15 RUSSIAN FEDERATION

2.15.1 Population and Languages spoken

The population of the Russian Federation (RF) is about 140 million. There are approximately 130-200 official and minority languages; there is no official list of official and minority languages. Linguists usually use tree-diagrams showing genetic affinity between languages (Indo-Europeans, Caucasians, Turkic languages, Finno-Ugrics etc.) succeeded by their subgroups division. In the linguistic encyclopedia dated 1990 it is said "about 130 languages" in USSR; according other sources there were about 200. Obviously, the difference can be explained by different treatment of minor languages dialects. The majority of these languages should be presented in Russia. The official list for disappeared languages, the "Red book" can be consulted on an English website (<http://www.eki.ee/books/redbook/>). According to data of 1989, there are 97 languages.

The last census data tables are on the site (<http://www.perepis2002.ru/index.html?id=17>). There is no information yet about native peoples in the Russian Federation but language diversity is well presented – about 150 languages (including 3 foreign ones that are record-holders). There is an attachment "National self-determination" and also a copy of the census schedule, but this does not include data about native language only nationality, knowledge of Russian and other languages.

According Russian legislation the official language of the RF is the Russian language.

2.15.2 The survey in Russian Federation

It was not possible to ask cultural institutions to complete questionnaires or receive their responses at first hand. So the survey was carried out by studying web-sites via the Internet. The cultural institutions were grouped in 3 categories (excluding research institutions): libraries, archives, museums. There are portals for each of these groups where you can find information about more than 4,000 cultural institutions.

- The library portal (www.libs.ru) gives information about 280 libraries of federation level, 104 of them have their own websites.
- The archive portal (www.archives.ru) gives information about 905 archives at different levels: 15 federation archives, 350 regional archives and 540 museum and library archives at federation and municipal levels.
- The portal "Museums of Russia" (www.museum.ru), the main Russian museums resource centre, gives information about more than 3,000 museums and access to 600 museum websites and CDs.

Based on data from these three sources, the survey findings reflect the situation in the Russian Federation more or less accurately.

Multilingual websites.

The library and archive portals are monolingual. The library portal is a gateway to websites of 104 libraries of which 15 are bilingual and one is trilingual (National library of Tatarstan <http://www.kitaphane.ru/>). Thus 15% of library websites are multilingual. 100% of the archive sites were monolingual.

In common with other countries, the survey found that museums were the only category really interested in presenting itself in more than one language. Many museum multilingual web-sites are in progress, with web-pages in foreign languages announced or in development. It's quite clear why

this is the case, museum activities are often (maybe always) directed to exterior international relations while libraries and archives are more aimed at the internal Russian audience.

Information about Russian museums websites was taken from the portal “Museums of Russia” and from a survey of the Moscow municipal cultural institutions in July 2004.

In the Russian Federation there are 94 museums (including branches) at federation level, 64 of these museums have websites (approximately 67%). Only 50% of the web-sites (32 out of 64), 34% of the federation museums, have web-pages in two languages (Russian and English). These vary from a simple introduction to a fully bilingual site. A very small minority of two museums (2.1%) has pages in languages other than Russian and English.

The survey of the Moscow municipal cultural institutions shows that over 50% of the Moscow museums (19 out of 31) have Internet pages or websites but that over 30% have some information in English.

To summarise the survey found:

- 5.7% of libraries have bilingual websites
- 0% of archives have multilingual websites
- Over 30% of the Russian museums have web-pages in two languages
- Over 2% of the Russian museums have web-pages in more than two languages

2.15.3 Thesauri and controlled vocabularies used

The survey of Russian Federation websites found that most search tools are links, query by form or full text searches. Vocabulary support is rare and mostly in the form of indexing terms (3 museums – over 2%).

As to the problem of controlled vocabulary, there is no Russian standard museum thesaurus or ontology that has been officially adopted or agreed by the Russian museum community. Museum terminology is concentrated in the most popular museum information systems and adjusted in the process of adaptation of the system for individual museum needs. In Russia there are two museum information systems installed in more than 100 museums, these are CAMIS (developed by AltSoft, Saint-Petersburg, www.altsoft.spb.ru) and “AIS Museum” (developed by the Main Computing Centre, the Ministry of Culture and Mass Communications). Each system has a set of controlled vocabularies, but these are only available in Russian. The Ministry of Culture and Mass Communications project “United Museum Catalogue” has declared that it will develop a standard museum thesaurus but this activity has not started yet.

Some Russian museums use vocabularies for indexing and documenting internally:

- Classifications on materials, technique, ethnicity and topical belonging (in Russian) have been developed by the Russian State Museum of Ethnography, Saint-Petersburg; these vocabularies are also presented as an independent resource on the web-site <http://www.ethnomuseum.ru>; the same Russian classifications on materials and technique are also used in the State Historical Museum, Moscow
- Polytechnic vocabularies (in Russian) developing by the State Polytechnic Museum www.polymus.ru, these are not directly visible for the end user
- The iconography thesaurus by F. Garnier (in Russian, French, English) – a Russian version of the descriptive standard vocabulary (controlled by the Ministry for Culture of France) has been developed in the State Historical Museum, Moscow.
- AAT (in Russian, English): a Russian translation of part of the Art & Architecture Thesaurus of the Getty Institute (materials, technique, periods) is being developed in the State Historical Museum, Moscow.

- The State Historical Museum, Moscow is working on relating terms on materials and technique in two vocabularies (the classifications of the Russian State Museum of Ethnography and AAT) in their original languages.

No multilingual thesauri with cultural coverage are published online with the relations between the terms clearly visible. The iconography thesaurus by F. Garnier (in Russian, French and English) is a multilingual controlled vocabulary available via the museum local network in the State Historical Museum.

2.16 SLOVAK REPUBLIC

2.16.1 Population and Languages spoken

Slovakia has relatively high proportion of national minorities in its total population, as to their diversity and number of varieties. Altogether, there are 10 national minorities which constitute about 15 % of all citizens. According to the 2001 Census, the largest is the Hungarian minority (9,7 %), followed by the Roma minority (1,7 %). But in reality, the percentage of Roma people is thought to be as high as 10 % of the population. The Czech (0,8 %) and other minorities have a representation below 1 %: the Ruthenians (0,4 %), Ukrainian (0,2 %), German (0,1 %), Polish, Moravian, Croatian, Russian, Bulgarian and Jewish.

The mixture of languages roughly corresponds to the ethnic composition of the country. The official language of the Slovak Republic is the Slovak, which was first officially codified in 1843.

In 1998 the legal basis for national minority issues was formed, the Framework Convention for the Protection of National Minorities. The Slovak Republic joined the European Charter for Regional or Minority Languages in 2001. Language rights of minorities are also defined by the Act on the use of languages of national minorities of July 1999 and other legislation (e.g. on name and surname, on names of communities, court order etc.). After 1998 the institutional framework was strengthened for the issues of national minorities and ethnic relationships. At the highest level of the supreme legislative body, the National Council of the Slovak Republic had the Committee for Human Rights and National Minorities, which was renamed after the 2002 Election to become the Committee for Human Rights, Nationalities and Position of Women. At the executive area, the post for the Deputy Prime Minister for Human Rights, Minorities and Regional Development was established. At the Government Office of the Slovak Republic a new Department for Minority Development of the Section for Human Rights, Nationalities and Regional Development. In 1999 the Government issued a Resolution no. 292/1999 to establish the Governmental Council for national minorities and ethnic groups, which serves as an advisory, initiative and coordination body of the Government for the area of the state nationality policy. The national minority issues are dealt with also under several Ministries, that have established designated organisational units for these affairs. An institutional reinforcement for protecting the minority rights came also in form of establishing the institute of public rights defendant – the ombudsman. The State exerts efforts to preserve the identity, mother tongue and culture of the members of minorities at several levels: by creation of a special subsystem of education of youth; by realisation of cultural activities; publishing periodical and non-periodical press; by the activity of cultural organisations (theaters, museums, professional groups).

2.16.2 The survey in Slovak Republic

The survey of multilingual cultural websites is based on the results of a 2003 survey conducted by the Department of Information technology at the Ministry of Culture of the Slovak Republic. That survey included questions regarding multilingual versions of websites.

Cultural Websites of organisations under the Ministry of Culture of the Slovak Republic

<i>Institution</i>	<i>URL(s)</i>	<i>Language versions</i>
Ministry of Culture of the Slovak Republic	www.culture.gov.sk www.ccp.sk	Slk, Eng

Film and theatre

Slovak Film Institute, Bratislava	www.sfu.sk www.sfd.sfu.sk	Slk
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Theatre Institute, Bratislava	www.theatre.sk	Slk, Eng
Slovak National Theatre, Bratislava	www.snd.sk	Slk,Eng,Ger
State Theatre, Košice	www.sdke.box.sk	Slk
Nová Scéna Theatre, Bratislava	www.nova-scena.sk	Slk

Music

Music Centre, Bratislava	www.hc.sk www.slovkoncert.sk	Slk,Eng
Slovak Philharmonic, Bratislava	www.filharmonia.sk	Slk,Eng,Ger
Slovak State Philharmonic, Košice	www.sfk.sk	Slk,Eng
Slovak Sinfonietta, Žilina	www.slovaksinfonietta.sk	Slk,Eng,Ger
State Opera, Banská Bystrica	www.stateopera.sk	Slk,Eng,Ger

Dance and folklore

Lúčnica, Bratislava	www.lucnica.sk	Slk,Eng
SLUK, Bratislava	www.sluk.sk	Slk,Eng,Ger
Ifju Szivek Hungarian Dance Group, Bratislava	www.ifjuszivek.sk	Slk,Eng,M

Galleries etc.

Slovak National Gallery, Bratislava	www.sng.sk	Slk,Eng
State Gallery, Banská Bystrica	www.isternet.sk/sghb	Slk,Eng
Bibiana - International House of Art for Children, Bratislava,	www.bibiana.sk	Slk,Eng
Slovak Design Centre, Bratislava	www.sdc.sk	Slk,Eng
ÚTUV, Bratislava (<i>institute for crafts and folk arts</i>)	www.uluv.sk	Slk, Eng

Museums and monuments

Slovak National Museum, Bratislava	www.snm.sk www.cemuz.sk	Slk
Slovak Technical Museum, Košice	www.stm-ke.sk	Slk,Eng
Museum of the Slovak National Uprising, Banská Bystrica	www.muzeumsnp.sk	Slk,Eng,Ger
Monuments Board of the Slovak Republic, Bratislava	www.pamiatky.sk www.heritage.sk	Slk, Eng

Libraries

Slovak National Library,	www.snk.sk ; www.viks.sk	Slk, partly Eng
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Martin	www.memoria.sk www.kis3g.sk	Slk Slk, Eng Slk, Eng
University Library, Bratislava	www.ulib.sk	Slk
State Scientific Library, Banská Bystrica	www.svkbb.sk	Slk, Eng
State Scientific Library, Košice	www.svkk.sk	Slk
State Scientific Library, Prešov	www.svkpo.sk	Slk
Slovak Library of Matej Hrebenda for visually handicapped, Levoča	www.skn.sk	Slk, Eng, Ger
<i>Other</i>		
House of Slovaks living abroad, Bratislava	www.dzs.sk	Slk
National Centre for Culture and Education, Bratislava	www.nocka.sk	Slk
Centre for Information on Literature, Bratislava	www.litcentrum.sk www.kniznarevue.sk www.capalest.sk	Slk, Eng, Ger, Fre, Rus
Slovak Central Observatory, Hurbanovo	www.suh.sk	Slk
Institute for State-Church Relations, Bratislava	www.duch.sk	Slk, Ger, Eng, Fre
<i>Source: www.mksr.sk/informatika</i>		

The table above shows all large organization that have a website. According to another survey of the Ministry (2003) seeking to find out the use of ICT in libraries, all major libraries (academic, research, national) have their website but this is the case for only 25% of smaller public libraries.

2.16.3 Thesauri and controlled vocabularies used

At present there are no multilingual thesauri in use on the Web by any Slovak cultural institutions. It is worth noting that the library sector uses the Universal Decimal Classification and monolingual subject headings extensively. Support for MARC 21 enables use of controlled vocabulary or thesauri in the future. Museums and galleries use their own monolingual lists of descriptors.

2.17 SLOVENIA

2.17.1 Population and Languages spoken

The official language of Slovenia is Slovene. In the territories where Italian and Hungarian minorities live the Italian and Hungarian languages also have the status of official languages.

There are a number of other minority languages spoken in Slovenia. The major linguistic groups are: Croatian, Serbian, Bosnian and Macedonian.

Cultural heritage sector in Slovenia (archives, museums, libraries)

The network of the Slovenian archival public service consists of one national Archive (the Archive of the Republic of Slovenia) and six regional Archives. The most important and well used private archives in Slovenia are those of the Roman Catholic Church. Another important archival centre is the Archive of Radio and Television in Ljubljana, but this is not a part of Slovenian archival public service network. The National Manuscript Collection in the National and University Library (<http://www.nuk.uni-lj.si/vstop.cgi?jezik=eng>) is the institution with the most extensive collection in this field in Slovenia.

Public services in the area of protection of the movable heritage are provided by the National Museum of Slovenia (<http://www.nuk.uni-lj.si/vstop.cgi?jezik=eng>) and a network of regional and town museums. Municipal and private museums also provide public service in cooperation with regional and national museums.

The library network in Slovenia comprises of a national library, academic, special, school and public libraries. The task of protection and presentation of cultural heritage is assigned to the national library, some special libraries and to public libraries, especially to the local history departments in the public libraries.

2.17.2 The survey in Slovenia

The survey included 39 cultural institutions: 5 archives, 20 libraries, 12 museums and 3 other institutions that fully or partly filled in the questionnaires.

39 cultural institution's websites were identified: 15 monolingual, 18 bilingual, 3 websites available in three languages and 1 available in 7 languages. 62% of all cultural institutions websites are available in more than one language. The most common second language is English (54%). The third most common language is German, especially on archives websites, other minority languages represented include Italian and Hungarian.

2.17.3 Controlled vocabulary and thesauri used

All of the bilingual and multilingual websites of the cultural institutions that took part in the survey were reviewed in order to identify bilingual or multilingual lexicons and thesauri.

No bilingual or multilingual lexicon or thesaurus was found in the desktop research. In most cases the information retrieval is supported by free text indexing. Bigger databases are normally searchable only in the Slovene language although all other information on the website is bilingual or multilingual.

2.18 SPAIN

2.18.1 Population and Languages spoken

Spain has 43.67 million inhabitants (as of 1st January 2005). It is a multilingual country as the result of its cultural diversity. Spanish or Castilian is the official language of the country as recognized in the Spanish Constitution of 1978. There are other regional languages which are co-official in their Comunidades Autónomas or regions, such as: Galician in Galicia, Catalan in Catalonia and the Balearic Islands, Valencian in the Valencia region and Basque in Navarra and Euskadi.

Other dialects claim the right to be considered languages, but in spite of controversy, multilingualism is a reality at local level, too: Balearic, Aragonese, Andalusian, and the dialects spoken in Extremadura, Murcia, Canary Islands and Asturias (bable). A variety of Occitan “aranés” is the official language of Val d’Arán and Portuguese is also spoken along the border with Portugal. The Spanish Constitution recognizes the richness of language diversity as a cultural heritage which must be respected and protected.

Foreign immigration is a recent phenomenon and, though it implies an impact in multilingualism, the figures are still not very representative. Two million foreigners are recognized by the authorities, in a high percentage coming from Latin America (from Spanish speaking countries).

The following illustrates the use of regional languages, following different surveys and shows the importance of these languages:

- 36 % of the population (2,115,279) speaks and/or understands Basque (62% do not speak and/or understand Basque)
- 94.48 % of population (6,813,319) speaks and/or understands Catalan (5.52% do not speak and/or understand Catalan)
- 89.02 % of population (2,750,985) speaks and/or understands Galician (10.97% do not speak and/or understand Galician)

2.18.2 The survey in Spain

Participation in the survey was very low and is not representative of cultural institutions, but nevertheless shows the interest of museums and IT projects related with heritage. The number of multilingual web sites is low and the effort is not focused on foreign languages but co-official languages (mainly Catalan). Regarding the use of tools for information retrieval, controlled vocabulary is not used in any of the six web sites which have participated in the survey.

A small survey of 12 of the main cultural Spanish institutions was been carried out in order to extract some conclusions.

- Museo Nacional del Prado. Madrid. (National Prado Museum): Spanish and English: 100% multilingual content
- Museo Nacional Centro de Arte Reina Sofia. (National Museum Art Center Queen Sofia), Madrid: Spanish and English; 10% multilingual content
- Fundación Thyssen-Bornemisza. Madrid: Spanish and English; 100% multilingual content
- Museo Guggenheim Bilbao: Spanish, English, French and Euskara; 100% multilingual content
- Museo de Bellas Artes de Sevilla (Museum of Fine Arts): Spanish; 0% multilingual content
- Museo de Historia de Cataluña (Catalunya History Museum), Barcelona: Spanish, English and Catalan; 100 % multilingual content

- Instituto Valenciano de Arte Moderno (Valencian Modern Art Institute), Valencia: Spanish, English and Valencian; 100% multilingual content
- Museo Picasso de Málaga (Picasso Museum) : Spanish and English; 100% multilingual content
- Museo de Arte Romano de Mérida (Roman Art Museum): Spanish; 0% multilingual content
- Museo Nacional de Ciencias Naturales (Natural History National Museum), Madrid: Spanish and English; 50% multilingual content
- Biblioteca Nacional. (National Library), Madrid : Spanish, English and Francés; 50% multilingual content
- Archivos Estatales (State Archives): Spanish; 0% multilingual content

From the analysis of these cultural web sites, the following conclusions can be drawn:

- Cultural Web sites do not reflect Spanish multilingualism regarding the variety of co-official and minority languages.
- Regional Institutional web sites are multilingual but only regarding the co-official language of their region
- The importance of cultural tourism is shown in the concern for choosing English as the language which allows international dissemination
- Although most of multilingual web sites try to make their content available fully in other languages, still there are cases where only some site content is multilingual.

2.19 UNITED KINGDOM

2.19.1 Population and Languages spoken

English is the most widely spoken language in the UK and it is the *de facto* official language. It is estimated that over 95% of the population of the UK are monolingual English speakers. The UK has several indigenous minority languages, which are protected under the European Charter for Regional or Minority Languages, which entered into force on 1st July 2001. Welsh, Gaelic and Irish are given the highest level of protection under the Charter with Scots, Ulster-Scots, Cornish and British Sign Language also being recognised.

Welsh is spoken by approximately 582,500 people with the number of Welsh speakers increased by 80,000 in the period between 1991 and 2001. This is the result of active measures to promote the language including bilingual education in schools, widespread use of Welsh in official documents and in broadcasting. The Welsh Language Act 1993 gave official recognition to the language requiring forms and other written material used in Wales to be equally available in Welsh as well as English unless there are serious practical difficulties.

In Scotland, Gaelic is spoken by approximately 69,500 people with the highest concentrations of Gaelic speakers living in the Highlands and Islands. Since 1980 specific legislation has been in place to support Gaelic language teaching in schools in Scotland with funds being made available under the Grants for Gaelic Language Education (Scotland) Regulations 1986. Broadcasting Acts in 1990 and 1996 placed a duty on the Secretary of State for Scotland to make payments to a Gaelic Broadcasting Fund. Following recognition in the European Charter provision was made for legal proceedings in court to take place in the Gaelic Language. On 21st April 2005 the Scottish Parliament passed the Gaelic Language Act, which recognises Gaelic as an official language in Scotland alongside English and establishes the Gaelic development body, Bòrd na Gàidhlig, to promote the use and understanding of Gaelic. Surveys suggest that approximately 30% of the population of Scotland speak Scots, with a larger percentage speaking Scots to some degree. Scots is on a linguistic continuum with English and many people switch between English and Scots in the middle of a sentence by using Scots words and grammar. There is no legislation relating to the Scots language but national education guidelines advocate the inclusion of Scots literature in the Scottish school curriculum.

In Northern Ireland, Irish is spoken by approximately 106,844 people. The Education Order (Northern Ireland) Act provides for the teaching of Irish as an integral part of the school curriculum. In the 1998 Belfast Agreement (Good Friday Agreement), the UK Government committed itself with Ireland to supporting linguistic diversity including support for both Irish and Ulster-Scots. Ulster-Scots is spoken by approximately 35,000 people in Northern Ireland.

In the South West of England, a survey in 2000 found that there were around 300 speakers of Cornish and that a further 750 people were learning the language in adult education colleges. Some teaching of the language is available in 12 primary and 4 secondary schools in Cornwall. Music, song and dance brings Cornish to an audience beyond the Cornish speakers, for example many choirs include Cornish songs in their repertoire. A small number of films is available in the language. There is no legislation relating to the Cornish language but Cornwall County Council, all of the District Councils and 38 parish councils have adopted policies in support of the language.

British Sign Language (BSL) is the sign language of the deaf community in the UK and there are approximately 70,000 people in the UK whose first or preferred language is BSL. There is little specific legislation in the UK that makes provision for BSL. But recognition by the UK government of BSL under the European Charter in 2003 included provision for funding for initiatives, gave

modern language status for teaching BSL and has led to provision for interpreters in the legal process and elsewhere.

There are large numbers of other languages spoken in the UK, which have been brought into the country and are sustained by immigrant communities. No single UK body collects information about the numbers of languages that are spoken but some indication is available from local authorities who translate materials into the languages spoken by inhabitants of their areas communities in their area. The most common languages in which materials are translated include: Bengali, Chinese, Gujarati, Punjabi, Somali, Turkish and Urdu.

According to a 2003 survey of school pupils around 10% do not speak English as their first language. This percentage is much higher in London, where a survey undertaken in 2000 found that over 300 languages were spoken in Schools (Baker, P. and Eversley, J., eds, 2000, Multilingual Capital, London). In order of the number of speakers, the top 40 languages were: English, Bengali & Sylheti, Panjabi, Gujarati, Hindi/Urdu, Turkish, Arabic, English-based Creoles, Yoruba, Somali, Cantonese, Greek, Akan, Portuguese, French, Spanish, Tamil, Farsi, Italian, Vietnamese, Igbo, French-based Creoles, Tagalog, Kurdish, Polish, Swahili, Lingala, Albanian, Luganda, Ga, Tigrinya, German, Japanese, Serbian/Croatian, Russian, Hebrew, Korean, Pashto, Amharic, and Sinhala.

Language for all: Languages for Life is a strategy document which sets out the UK Government's plans to transform the country's capability in languages. This document recognizes language competence and inter-cultural understanding as an essential part of being a citizen but acknowledges blockages in the current UK system including: teacher shortages, limited language learning opportunities and under-use of ICT.

2.19.2 The Survey in United Kingdom

The extent of multilingualism in the UK's cultural websites is quite limited. Measures are being taken to support the UK's regional minority languages. In Wales, where the Welsh Language Act has been in place since 1993, bilingual Welsh-English cultural websites are the norm. In Scotland also there are now some bilingual Gaelic-English websites with other sites providing some parts of their content in both Gaelic and Scots. Some community information services are also providing all or part of their content in languages other than English. Several cultural institutions provide part of their content (generally the welcome page) in a range of languages to support cultural tourism. But the majority of cultural websites in the UK are monolingual English language sites. For example, of the 200 websites that were developed through the NOF-digitise programme, 97% were monolingual.

In 2004, 19 UK institutions took part in the MINERVA survey of multilingualism in cultural websites. These included 3 archives, 2 cultural sites, 1 library, 5 museums and 8 other cultural organisations.

- AlphaGalileo Foundation
- Archaeology Data Service, University of York
- Archives Network Wales
- The British Museum
- CIDOC: ICOM International Committee for Documentation
- Culturenet Cymru
- Department of Culture, Arts and Leisure Northern Ireland
- East of England Museums Libraries & Archives Council
- Gwynedd Archaeological Trust

- The Highland Council. Library Support Unit
- Museum of London
- The National Galleries of Scotland
- Petrie Museum of Egyptian Archaeology
- Planarch
- Royal Commission on the Ancient and Historical Monuments of Scotland
- Royal Commission on the Ancient and Historical Monuments of Wales
- Scottish Library and Information Council
- Scottish Museums Council
- The Tate

All of the websites were available in English. Six of the websites were mono-lingual while 13 were multilingual as follows:

- 6 sites were available in 2 languages
- 2 sites were available in 3 languages
- 1 site was available in 4 languages
- 1 site was available in 5 languages
- 3 sites were available in 6 languages
- 2 sites were available in 9 languages

Four of the UK's regional and indigenous minority languages were represented including Welsh, Scots, Irish and Scots Gaelic. The other languages represented included European languages, other world languages and sign languages.

Four of the institutions that took part in the MINERVA survey maintain websites that are bilingual in Welsh and English. The extent to which the contents of these sites is available in both languages varies. Culturenet Cymru (<http://www.culturenetcymru.com>). Maintains parallel websites in Welsh and English with the full contents available in both languages. Both the Royal Commission on the Ancient and Historical Monuments for Wales (<http://www.rcahmw.org.uk/>) and Archives Network Wales (<http://www.archivesnetworkwales.info/>) maintain websites where much of the content is bilingual in Welsh and English but which provide access to databases that are as yet only available in English. The Gwynedd Archaeological Trust (<http://www.heneb.co.uk/>) is currently developing its bilingual Welsh-English website.

The Petrie Museum for Egyptian Archaeology (<http://www.petrie.ucl.ac.uk/>) maintains a bilingual English-Arabic website. Descriptions of the museums collections, its history and key information for visitors are available in Arabic. But the collection databases and teaching and learning resources developed by the museum are only available in English.

The website maintained for the CIDOC: ICOM International Committee for Documentation (<http://www.willpowerinfo.myby.co.uk/cidoc/>) is partly bilingual in English and French. The full contents of this website are only available in English.

Nine of the institutions that took part in the MINERVA survey reported maintaining parts of their websites in more than two languages and as many as nine languages. The extent to which the contents are available in these languages varies.

The ARENA project was funded by the European Commission's Culture 2000 programme and had partners in six countries. The ARENA portal (<http://ads.ahds.ac.uk/arena/search/>) is available in the six languages of the partners (English, Danish, Icelandic, Norwegian, Romanian and Polish) and there is a fully multilingual search interface that provides access to an index record in each of the six languages with the full text of the record being made available in the native language.

The Planarch project was funded by the European Regional Development Fund and has partners in four countries. The project website (<http://www.planarch.org/index.php>) will be available in the four project languages (English, Dutch, French and German) but the site is currently under development.

The website maintained by the Department of Culture, Arts and Leisure (Northern Ireland) (<http://www.dcalni.gov.uk/>) is partly available in 13 languages. Welcome pages are available in English, Irish, Ulster-Scots, Irish Sign Language, British Sign Language, Traditional Chinese, Hindi, Simplified Chinese, Urdu, Portuguese, Punjabi, Arabic and Bengali. The signed languages are provided using streamed video. Current issues and Frequently Asked Questions are available in Ulster-Scots and Irish as well as English. But the full contents of the website are available only in the English language.

Several of the cultural institutions that took part in the MINERVA survey maintain, as part of their English-language website, multilingual versions of the welcome page and key information in a number of languages. These include the British Museum (French, Spanish, Italian, German and Japanese), Scotland's Culture (Scots, Czech, German, Spanish, French, Croatian, Italian and Portuguese), the Tate online (Spanish, French, German, Italian, Portuguese, Arabic and Japanese) and the Museum of London (French, German, Italian, Spanish).

The MINERVA principals for quality websites highlight the ease with which users can switch between languages as an important aspect of support for multilingualism. It is interesting to note that this facility differs in the sites maintained by the institutions that took part in this survey. In some websites users must choose what language version they wish to use on the home page and no provision is made to switch languages deeper within the website. On other websites, particularly where institutions are actively seeking to promote regional languages to learners, it is possible to switch from one language to another throughout.

2.19.3 Controlled vocabularies and thesauri

The cultural institutions that took part in the MINERVA survey also reported on the use of controlled vocabularies and information retrieval tools in their websites. These were as follows: five websites used controlled vocabularies, six used free-text indexing, seven used no vocabulary tool while one site was reported to use another tool (neither a controlled vocabulary nor free text indexing).

The vocabulary tools that were registered include:

- ARENA periods - a simple vocabulary list in English, Danish, Norwegian, Icelandic, Polish and Romanian. This list is unpublished but is made available on request free of charge by the Archaeology Data Service.
- ARENA top level themes – a simple vocabulary list covering the cultural heritage and sites and monuments and available in English, Danish, Norwegian, Icelandic, Polish and Romanian. This thesaurus is unpublished but is made available on request free of charge by the Archaeology Data Service.
- Culturenet Cymru bilingual Welsh-English subject index – a glossary or terminology list of 1000–5000 terms relating to the cultural heritage in Wales. This list is unpublished but is made available on request free of charge by Culturenet Cymru.

Monolingual thesauri and terminology lists were registered by English Heritage, the Tate and by the Scottish Library and Information Council.

Other terminology resources exist in the UK but were not registered in the UK survey. For example, the Tate has developed glossary definitions in British Sign Language (<http://www.tate.org.uk/collections/glossary/bsl-list.jsp>) and it also offers PDA-based gallery tours in BSL.

3. Good practice examples

3.1 BEST PRACTICES FOR MULTILINGUAL THESAURI

Creating a multilingual thesaurus can be really expensive, and highly complicated due to the semantic problems between different languages, and also it takes a long time. That is why we have decided to collect information on thesauri used by different cultural institutions all over Europe.

During the survey there were more than 100 thesauri registered by the participating countries of the MINERVA Plus project. The registration was voluntary, so of course not all the controlled vocabularies are registered in our database, which are available. We were looking for thesauri, which are currently used by cultural institutions, and may be convenient for online implementation: information retrieval in digital collections.

We present you some of them in details, which are available in more than two languages, and have already been used in many European countries. With this collection of thesauri we would like to encourage the European cultural institutions after they decided to use a thesaurus for subject indexing, consider of choosing a well-tried multilingual one. It can be very useful for example by combining different collections, which is an emerging trend in all over the world. Time to time more international joint catalogues, and digital collections are being created with multilingual interfaces, and cross-language search facilities, for example The European Library, and The European Digital Library.

✓ **The UNESCO thesaurus** <http://www.ulcc.ac.uk/unesco/>

The UNESCO Thesaurus was created in 1977 by the United Nations Educational, Scientific and Cultural Organization (UNESCO). Its purpose was to act as the main working tool of the UNESCO Computerized Documentation System (CDS) and allow indexing and information retrieval in the UNESCO Bibliographic Database (UNESBIB) and other sub-databases that are part of the UNESCO Integrated Documentation Network.

The UNESCO Thesaurus is a controlled and structured list of terms used in subject analysis and retrieval of documents and publications in the fields of education, culture, natural sciences, social and human sciences, communication and information, politics, law and economics and countries and country groupings. This trilingual thesaurus contains 7,000 terms in English, 8,600 terms in French and 6,800 in Spanish that are spread between seven major subject domains broken down into micro-thesauri. There is a yearly increase of about 20 terms.

The first 1977 edition was in English only. French and Spanish translations became available in 1983 and 1984. The version now in use is the second printed edition published in 1995 – with some amendments. The thesaurus is enriched and updated regularly. For the second printed edition the frequency of occurrence of each descriptor in document indexing in the UNESBIB database was measured, in order to choose the descriptors. In case of doubt the last version of the OECD (Organisation for Economic Co-operation and Development) multilingual Macrothesaurus (html version: <http://info.uibk.ac.at/info/oecd-macroth/>) was systematically referred to. More specialized thesauri were also consulted in order to ensure better terminological compatibility with the international controlled vocabularies. The current CD-Rom version (UNESBIB Bibliographic database – UNESCO Thesaurus CD-Rom, 2004) is the 12th edition.

The structure of the Thesaurus follows the ISO 2788 and ISO 5964 standards. The thesaurus functions supported are: Broader / Narrower Term, Use / Used For, Related term, Scope Note. The thesaurus is available on the UNESCO Databases CD-Rom and through Internet (<http://databases.unesco.org/thesaurus/>). A paper version is available as well. It is made of four parts: alphabetical structured and permuted list sorted by English terms, with their French and

Spanish equivalents; hierarchical list by microthesaurus; French/English/Spanish index of descriptors; Spanish/English/French index of descriptors.

Users of the Thesaurus are the institutions in Member States, United Nations System and other intergovernmental organizations, international non-governmental organizations, experts and consultants, UNESCO staff and visitors to the Organization. The Thesaurus can also be used for subject indexing by libraries, archives, documentation centres. For instance, the monolingual UK Archival Thesaurus (UKAT) and UK National Digital Archive of Datasets (NDAD) have taken the UNESCO thesaurus as their starting point.

A part of the UNESCO thesaurus may be used in the future for the French catalogue of cultural digital collections within the framework of the Michael project.

The website and web interface for the UNESCO Thesaurus are maintained by the University of London Computer Centre (ULCC). It is now possible to search the online unesdoc / unesbib catalogue directly from the Thesaurus. Requests for permission to use Thesaurus data have to be directed to the UNESCO library (library@unesco.org). A copy of the thesaurus can be obtained for a small fee: 23 € for the CD-Rom in 2005. The softwares used are Winisis, BASIS, and wwwisis (web version). More information is available at <http://www.ulcc.ac.uk/unesco/>. The contact person for the UNESCO Thesaurus is Meron Ewketu at the UNESCO Library (email: m.ewketu@unesco.org; phone: + 33 1 45 68 19 34/35; fax: + 33 1 45 68 56 17/98).

The UNESCO Thesaurus is a controlled and structured list of terms used in subject analysis and retrieval of documents and publications in the fields of education, culture, natural sciences, social and human sciences, communication and information. This trilingual thesaurus contains 7,000 terms in **English**, 8,600 terms in **French** and 6,800 in **Spanish** that are spread between seven major subject domains broken down into micro-thesauri. It is now possible search the online unesdoc / unesbib catalogue directly from the thesaurus. The thesaurus functions are Broader / Narrower Term, Used For, Related term, Scope Note, Descriptor, Non-Descriptor.

A part of the UNESCO thesaurus may be used in the future for the French catalogue of cultural digital collections within the framework of the MICHAEL Project.

In Russian, UNESCO thesaurus is used. The multilingual thesaurus attached to the HEREIN project intends to offer a terminological standard for national policies dealing with architectural and archaeological heritage, as defined in the Convention of Granada (October 1985) and Valletta (January 1992). At first, it will be conceived in English, Spanish and French; it will subsequently be possible to extend the thesaurus to other languages. This tool is intended to help the user of the website when surfing through the various on-line national reports. Thanks to its standardized vocabulary (ISO 5964 standard: *Guidelines for establishment and development of multilingual thesauri*) and to the scope notes appended to each term - which form source material - the multilingual thesaurus gives access, with one concept, to different national experiences or policies whose specific designation, administrative structure, and development provide a view over the wide-ranging extent of European cultural diversity. Besides which, the thesaurus offers the user a terminological tool which allows them to have a better understanding of all the concepts they come across when reading the reports; thanks to the hierarchical and associative interplay of terms, the users can complete or extend their knowledge of the subject. Partners: Cyprus, France, Hungary, Lithuania, Poland, Romania, Slovenia, Spain, Switzerland, United-Kingdom.

✓ **Library of Congress Subject Headings (LCSH)**

The Library of Congress Subject Headings (LCSH) is a thesaurus from which the subject indices of documents (books, articles etc) are selected. It is an accumulation of the headings established at the US Library of Congress since 1898. It currently contains over 220.000 terms and its organization is based on the ISO-2788 standard.

The MACS project (Multilingual Access to Subjects)

The MACS project aims at providing a multilingual access to subjects in the catalogues of the participants. These are Die Deutsche Bibliothek ([SchagWortnormDatei](#)), The **British** Library (Library of Congress Subject Headings), the Bibliothèque Nationale de France ([Répertoire d'Autorité-Matière Encyclopédique et Alphabétique Unifié](#)), and the **Swiss** National Library which was in charge of the SWD / RSWK project. No language is used as a source language in the MACS project. Each indexing language is autonomous but linked to the others by concept clusters. The RAMEAU language has been developed since 1980 in an autonomous way from the Quebec Laval university "Répertoire de vedettes-matières" (Laval RVM) that is itself a translation of the Library of Congress Subject Headings. Some English and French equivalents therefore already exist and this allows a search of some French library catalogues with the LCSH (Service Universitaire de Documentation, Lyons Local Library, ...) but this is not the case with the German language. In the MACS project the terms of the three lists (LCSH, Rameau, SWD) are analysed in order to determine whether they are exact or inexact linguistic equivalents. A MACS prototype is being developed by Index Data (Danemark) and Tilburg University Library (Netherlands) that uses the Link management Interface (LMI). This project is likely to be used in the TEL project (The European Library), which started in 2001.

Commento [o1]: English name?

Commento [o2]: English name?

"Library of Congress Subject Headings "

- **In France**, on the model of the LCSH, the **Rameau** language has a structure in three levels which makes its richness but also its complexity:
 - at the terminological level (= terms selected, called headings + excluded or rejected terms), Rameau is a controlled language, in particular as for the form of the vocabulary, with synonymy and the homonymy: the objective is to arrive to a homogeneous and univocal language (where 1 heading = 1 concept and 1 concept = 1 heading), while multiplying the access points under the terms retained starting from excluded terms;
 - at the semantic level (= relations between generic terms, specific and associated), Rameau is a language arranged hierarchically with the manner of a thesaurus: the objective is to allow a navigation between the terms selected in order to widen (generic terms), to refine (narrower terms) or to reorientate (associated terms) research;
 - at the syntactic level (=headings+ subdivisions), Rameau is a precoordinated language obeying precise rules of construction: the objective is to allow, beside research by words, one Library of Congress Subject Headings",
- **In Germany**, through the **Multilingual access to subjects MACS** project (<http://laborix.uvt.nl/prj/macs>), links have been established between three indexing languages used in three different national library services (the German Subject Headings Authority SWD, the **Library of Congress Subject Headings LCSH** and the Répertoire d'autorité-matière encyclopédique et alphabétique unifié RAMEAU) in order to facilitate multilingual access to library catalogues. A prototype developed by Index Data and the Tilburg University Library can be viewed under <http://laborix.uvt.nl/prj/macs/prototyped.html>
- **In Greece**, LCSH (<http://www.loc.gov/cds/lcsh.html>): There exist custom translated versions of LCSH which are used by the majority of Greek libraries that provide access to their items information on-line. Concurrent multilingual use of LCSH is not always the case; however some bilingual examples include the **Library of the Technological Educational Institute of Thessaloniki**.
- **In Hungary**, LCSH The Library of Congress Subject Headings http://webpac.lib.unideb.hu/corvina/nagy/term_search are used by the **University and**

National Library, University of Debrecen <http://www.lib.unideb.hu/>. It is permanently developed. There are more than 10001 terms have been translated yet.

- **In Israel**, The BARCAT - Bar-Ilan Library Catalog תירבעב מ'אשונ תורתוכ (תע-בתכ) <http://library.os.biu.ac.il> - Bar Ilan University digital subject listing in Hebrew and English. This work is based on a translation and adaptation of Library of Congress Subject Headings (LCSH).
- **In Poland**, the information retrieval at the majority of Polish on-line catalogues and the two central catalogues includes the **Library of Congress Subject Headings (LCSH)** system. LCSH has been translated from English through French RAMEAU so in theory it should be possible to search those catalogues in three languages. Since nineties we can observe a growing number of on-line catalogues available. These can be found on library websites. Among them the most important two central catalogues are available: NUKAT (<http://www.nukat.edu.pl/>) and KARO [Distributed Catalogue of Polish Libraries](http://www.nukat.edu.pl/) (<http://www.nukat.edu.pl/>). In addition 10 library on-line catalogues with interface in English are accessible.
- In Latvia , the Library of Congress Subject Headings (LCSH) is used also.

✓ **The HEREIN thesaurus**

<http://www.europeanheritage.net/sdx/herein/thesaurus/introduction.xsp>

The “first multilingual thesaurus in the cultural field at an international level ” according to the Council of Europe is now available online²⁸. This service is developed by the European Heritage Network (HEREIN). It aims at offering a terminological standard for national policies dealing with architectural and archaeological heritage and at helping the user of the website when surfing through the various online national reports. Users of the Thesaurus include authorities, professionals, researchers, training specialists. A French scientific committee was set up in October 2005 in order to further define how to make French heritage policies available on the HEREIN database.

The Herein thesaurus is made of more than 500 terms in seven languages (English, French, German, Spanish, Bulgarian, Polish and Slovenian) but eleven other languages will soon be available. It was constructed from scratch and based on the use of the equivalence, hierarchical and associative relationships. The ISO 2788 thesaurus standard was followed as well as ISO 5964 except that no source language was chosen.

The three teams (from Spain, France and the UK) which constructed the thesaurus first created each a separate list of terms and then compared them. They first brought out the different classes representing the broadest level and sorted the terms into the classes. Then within each class the terms were ordered following the same hierarchical relationship for all linguistic versions of the thesaurus. Poly-hierarchy was avoided as much as possible.

When entering a query with the help of the thesaurus one can choose to specify what kind of relationships one wants to include : broader / narrower terms, related terms, preferred / non preferred terms, linguistic equivalents (exact / inexact). The thesaurus is downloadable on Internet.

²⁸ The HEREIN thesaurus is available at : <http://www.european-heritage.net/sdx/herein/thesaurus/introduction.xsp>

The contact persons for the HEREIN thesaurus at the Cultural Heritage Division of the Council of Europe are Christian Meyer (christian.meyer@coe.int) and Laetitia Hamm (laetitia.hamm@coe.int).

The contributors are: in Bulgaria, the Ministry of Culture, the National Institute for Monuments of Culture, the Bulgarian National Committee of ICOMOS; in Cyprus, the Ministry of Interior, the Department of Town Planning and Housing; in France, the Direction de l'Architecture et du Patrimoine (Department of Heritage and Architecture) of the French Ministry of Culture and Communication (contact person: Orane Proisy; email: orane.proisy@culture.gouv.fr); in Hungary, the Kultúrális Örökségvédelmi Hivatal (National Office of Cultural Heritage); in Lithuania, the Academy of Cultural Heritage; in Poland, the Ministerstwo Kultury, Department for the Protection of Historical Monuments; in Romania, the CIMEC - Institutul de Memorie Culturala; in Slovenia, the Ministry of Culture, the National Institute for the protection of Cultural Heritage; in Spain, the Ministerio de Educación Cultura y Deporte, Subdirección General de Protección del Patrimonio Histórico, the Consejo Superior de Investigaciones Científicas - Centre for Scientific Information and Documentation; in Switzerland, the Federal Office of Culture; in the United Kingdom, the English Heritage

The “first multilingual thesaurus in the cultural field at an international level ” according to the Council of Europe is now available online²⁹. This service is developed by the European Heritage Network (HEREIN). It aims at offering a terminological standard for national policies dealing with architectural and archaeological heritage and at helping the user of the website when surfing through the various online national reports. A French scientific committee was put in place in October 2005 in order to further define how to make French heritage policies available on the HEREIN database. The Herein thesaurus is made of more than 500 terms in seven languages (English, French, German, Spanish, Bulgarian, Polish and Slovenian) but eleven other languages will soon be available. It was constructed from scratch and based on the use of the equivalence, hierarchical and associative relationships. No source language was chosen. The three teams (from Spain, France and the UK), which constructed the thesaurus first created each a separate list of terms and then compared them. They first brought out the different classes representing the broadest level and sorted the terms into the classes. Then within each class the terms were ordered following the same hierarchical relationship for all linguistic versions of the thesaurus. Poly-hierarchy was avoided as much as possible.

When entering a query with the help of the thesaurus we can choose to specify what kind of relationships one wants to include: broader / narrower terms, related terms, preferred / non preferred terms, linguistic equivalents (exact / inexact).

✓ **The NARCISSE vocabulary and the EROS project:**

The Scientific Restoration Research Centre for Museums in France ([C2RMF](http://www.c2rmf.fr)) gave the impulse to the European NARCISSE project (Network of Art Research Computer Image SystemS) in the late 1980s. This project aimed at building a multilingual database to manage museum laboratory documentation relating to painting materials. A multilingual controlled vocabulary proved necessary to describe the works of art, the technical data relating to the photographic archives, the restoration and study reports. It was elaborated in German, Italian, Portuguese and French from the beginning and voluntarily restricted to 300 words. From 2001 onwards the NARCISSE vocabulary was used and updated within the framework of the EROS (European Research System) project, which was launched in collaboration with the Mission for Research and Technology of the French Ministry of Culture. Currently, over 300,000 photographic and radiographic images, 10,000 technical reports, 500 3D objects, 200,000 quantitative analyses related to 56,000 works of art are accessible online in digital form on the EROS database.

²⁹ The HEREIN thesaurus is available at : <http://www.european-heritage.net/sdx/herein/thesaurus/introduction.xsp>

The database allows research about the works depending on their fabrication technique, the materials used, their ageing process?. The EROS system uses open source softwares that use the Web technologies and respect the new interoperability and content management standards. It relies on advanced content recognition techniques. It uses at the same time multilingual value lists (NARCISSE vocabulary), an SQL search engine operating on metadata tables and free text, a search engine operating on multilingual indexes extracted from full text with an English-French interface (Pertimm), a graphic 3D interface with query according to an ontological model (Sculpteur software³⁰), a semiautomatic clustering classification system (RETIN) and image similarity research based on a vectorial tool. The NARCISSE vocabulary is now translated in **German, English, Catalan, Chinese, Danish, Spanish, French, Italian, Japanese, Portuguese and Russian**. It is organized as a set of dictionaries for each translatable field and for each available language. Some of them are hierarchical. In order to get a quicker answer when searching the data within the main database is stored in a compact language independent format as short codes. The system is able to handle multiple entries within a single field. The thesaurus cannot only handle a full lexical hierarchy but also synonyms and complex character sets such as Japanese and Chinese (via Unicode encoding). The EROS database has been entirely translated from the French language into English, Japanese, Chinese and partially in Portuguese. In due course the system will be set up in the French network of restoration workshops. Some controlled vocabularies used in France and available on line were developed as European projects. This is the case of the HEREIN thesaurus in the area of architectural and archaeological heritage policy and of the Malvine thesaurus which is used for searching the IMEC (Institut Mémoire de l'Edition Contemporaine) database in France in the field of manuscripts and letters. The EROS and NARCISSE databases about restoration and conservation are based on a multilingual controlled vocabulary but the EROS database is not yet available online and only a part of the NARCISSE database is available online – in French only.

✓ **In field of iconographic description: ICONCLASS**

<http://www.iconclass.nl/>

A larger number of art museums uses the ICONCLASS notations for iconographic description, enabling multilingual access via the Internet if the correct technical, financial and legal prerequisites are in place

<http://www.iconclass.nl/> ICONCLASS

- is a specific international classification that the museums can employ for iconographic research and the documentation of images
- contains definitions of objects, people, events, situations and ideas abstract which can be the subject of an image.

Comprise a system of classification (approximately 28 000 definitions), an alphabetical index, as well as a bibliography of 40 000 references to books and articles in the fields of the iconography and the cultural history. ICONCLASS is available at the present time only in English but is in the course of translation in French and other languages.

A larger number of German art museums uses the **ICONCLASS** notations for iconographic description, enabling multilingual access via the Internet if the correct technical, financial and legal prerequisites are in place. Iconclass in German

<http://194.171.152.226/libertas/ic?style=index.xml&taal=de>)

A good example of an Iconclass implementation is the site on medieval illuminated manuscripts of Museum Meermanno and the Royal Library.

<http://www.kb.nl/kb/manuscripts/browser/index.html>.

³⁰ A description of the Sculpteur project is available at : <http://www.sculpteurweb.org/>

Garnier's Thesaurus Iconographique is basically a development of the ICONCLASS system where the notation has been simplified. Only broad classes have notations, so such notation is limited to four or five digits. A practical approach is taken, not to enumerate every sort of variation within a scene, but to provide a string of keywords, which will facilitate retrieval of documents or images. The iconographical analysis is not as deep as that of ICONCLASS, but this is probably an advantage in a retrieval tool not intended as a document surrogate." Steven Blake Shubert: Classification in the CHIN Humanities Databases, 1995. Thesaurus iconographique : système descriptif des représentations / François Garnier. - Paris : Léopard d'or, c1984. - 239 s. : ill. ; 30 cm. ISBN: 2-86377-032-2

3.2 BEST PRACTICE EXAMPLES FOR MULTILINGUAL WEBSITES

Internet users form a huge multilingual community, and they can visit as many places virtually as they want to. The only problem could be, when they find a website, which is referred relevant to their search, but they don't speak the language of the site. This is a good reason for institutions to provide information in different languages on their websites, to gain more virtual visitors. During the survey 657 multilingual websites were registered from 24 countries. We asked the national representatives to nominate some of them as a best practice example, to encourage cultural institutions to translate their websites to different languages.

For information retrieval on most of the websites free text indexing is used, but there are sites, which provide thesaurus for searching the content. There are advantages and disadvantages of both tools - as we presented in the chapter 1.4, so we introduce them in two separate sections.

3.2.1 Best practice examples of multilingual websites with thesaurus

Czech Republic

The Museum of Decorative Arts in Prague (<http://www.upm.cz/>)

Description: This website is available in 2 languages, it provides a search tree as a search facility (Czech, English)

France

Val-de Loire – patrimoine mondial (<http://www.valdeloire.org/>)

Description: Ease of switching between languages.

The Grandidier collection of Chinese ceramics (catalogue de la collection Grandidier de céramiques chinoises) on the website of the Museum of Asian Arts (<http://www.museeguimet.fr/>)

Description: The bilingual treatment of a controlled vocabulary: The Museum of Asian Arts – Guimet uses a French-Chinese controlled vocabulary in the areas of humanities and art history, more specifically about Asian art and fire arts. This vocabulary comprises a value list, a classification, an index and a glossary and is made of 1,000 to 5,000 terms.

Unifrance (<http://www.unifrance.org/>)

Description: The volume and the level of the vocabulary processed: the Unifrance website allows a search in its database about cinema through a number of lists of terms which add up to more than 10 000 terms in four languages while the website of the City of Carcassonne offers a terminological analysis in three languages of the technical terms that are used.

Germany

Virtual Library for Anthropology EVIFA (<http://www.evifa.de/>)

Description: Online resources are accessed via a search mask and browsing structure for topics (using a thesaurus provided by the International Bibliography of Anthropology IBA) and sources in English and German

[International Architecture Database - archINFORM](http://www.archinform.net) (www.archinform.net)

Description: In addition to the static context of the website and the navigation, dual language tools in English and German are made available for retrieval purposes. Personal names can be located alphabetically, and subject headings and geographic terminology can also be searched in a hierarchic order. Recording of further foreign language terminology – including languages from outside the European Union – is already partially realized. A few terms can also be acoustically selected in German, English, French and Italian.

Greece

[Myriobiblos, the Digital Library of the Church of Greece](http://www.myriobiblos.gr) (<http://www.myriobiblos.gr>)

Description: Makes its content available using a bilingual Greek-English vocabulary.

Hungary

[The Fine arts in Hungary](http://www.hung-art.hu/index-e.html) (<http://www.hung-art.hu/index-e.html>)

Description: Its cultural content is professional but can be searched by different aspects in both languages -English and Hungarian.

Israel

The Central Database of Shoah Victims' Names of the Yad Vashem Archives
(http://www.yadvashem.org/wps/portal/TY_HON_Welcome)

Description: The Page of Testimony registry uses a thesaurus, is bi-directional and truly multilingual. The advanced searches query the following fields: Names, Places, Date, Submitter, and Family Members. With over 10 languages equated to two main searchable languages: Hebrew and English.

IMAGINE The Image Search Engine of the Israel Museum, Jerusalem
(<http://www.imj.org.il/imagine/Search.asp>)

Description: The thesaurus contains over 50,000 edited bilingual terms. At present the lexicon is available in Hebrew and English. A trilingual (Hebrew, Arabic, English) searchable hierarchal database exists online in the image filled “Living Together Project” (<http://www.imj.org.il/youthwing/livingtogether/searchEng.asp>).

Hadashot Arkheologiyot – Excavations and Surveys in Israel online publication by Israel Antiquities Authority (http://www.hadashot-esi.org.il/search_eng.asp)

Description: On line journal – Excavations and Surveys in Israel (HA-ESI). The journal contains preliminary reports of excavations and surveys in Israel, as well as final reports of small-scale excavations and surveys; it also publishes archaeological finds recorded during inspection activities. The journal is bilingual, Hebrew and English; reports submitted in English are translated into Hebrew and vice versa.

The Ketubbot Collection of the Jewish National & University Library (JNUL)
(<http://jnul.huji.ac.il/dl/ketubbot/>)

Description: Many projects fall under the auspices of the Jewish National and University Library (JNUL) but only The Ketubbot collection uses a lexicon within its database. The lexicon interfacing is only in English but Hebrew terms can be searched as well. The collection can be accessed by a country list using, a “Graphic List” or a “Textual List”. In addition an Aleph search engine can be used to query various parameters.

Italy

Library Claudia Augusta of the provincial administration of Bolzano, Trentino-Alto Adige region (<http://www.bpi.claudiaugusta.it/>)

Description: The Bolzano province is bilingual Italian-German and this web site is organized in 3 sections, Italian, English, and German; the catalogue is only in Italian and German).

On-line Sardinian dictionary (<http://www.ditzionariu.org/home.asp?lang=sar>)

Description: Translation from Sardinian to Italian, French, English, German, and Spanish.

Malta

Malta Tourism Authority's Website (<http://www.visitmalta.com>)

Description: available in 9 language interfaces: English, French, Italian, German, Spanish, Russian, Dutch, Chinese and Japanese. Search results in English.

Netherlands

Medieval Illuminated Manuscripts of Museum Meermanno and the Royal Library (<http://www.kb.nl/kb/manuscripts/browser/index.html>)

Description: This website is a good example of an Iconclass implementation (French, German, English).

The Anne Frank Museum (or Achterhuis) (<http://www.annefrank.org/>)

Description: has a site with complete language versions in Dutch, English, German, French, Spanish and Italian. Searches can be performed using Google, an a-z list of topics and a list of categories in all languages.

The Archive of the Province of Fryslân (<http://www.tresoar.nl/>)

Description: offers a full version in frysk, the regional language

Poland

University Library in Wrocław (www.bu.uni.wroc.pl)

Description: 90% available in English and German with both searching and the on-line catalogue in the two languages; like the Manuscriptorium, yet the data is only in Polish? German?

Technical University of Lodz – Main Library (www.bg.p.lodz.pl)

Description: 70% available in English with both searching and the on-line catalogue available in English.

Auschwitz-Birkenau Museum in Oświęcim (www.auschwitz-birkenau.oswiecim.pl)

Description: 100% available in English and German with searching in both languages.

Russian Federation

State Hermitage website (www.hermitage.ru)

Description: presents cultural content including a digital collection and provides excellent search facilities for the content including QBIC search - an image content search that lets to find works of art by their visual details. The site content is available in more than one language etc. The State Hermitage website was designed and developed with the help of IBM.

The portal “Museums in Tatarstan” (<http://www.tatar.museum.ru>)

Description: has Tatar, Russian and English versions and is oriented to various user communities, including the Tatar Diaspora abroad. The portal has its singularity: audio fragments (texts, Tatar poetry and music) in the Tatar, Russian and English versions of the portal.

Slovenia

COBISS.SI (Co-operative Online Bibliographic System & Services) (<http://www.cobiss.si/>)

Description: is a shared bibliographic database (union catalogue) created by 280 participating libraries and is developed and maintained by the Institute for Information Science Maribor. It is a network application that allows libraries and end users online access to the bibliographic databases in the COBISS system as well as to various specialised databases (of local and foreign database providers) on local servers or remote Z39.50 servers. Of the three user interfaces (Telnet, Windows and Web), the most popular is the Web interface. It is fully bilingual in Slovene and English.

The Moderna Galerija (Gallery of the Contemporary Art) (<http://www.mg-lj.si/>)

Description: houses the national collection of 20th century Slovene art (paintings, sculptures, prints and drawings as well as photography, video and electronic media collections), a collection of works from the former Yugoslavia, and the international collection Arteast 2000+. The national collection presents the basic stages in the development of the Slovene tradition of modern and contemporary art from the beginning of the 20th century onwards. The web presentation of the Gallery is attractive and well organized. It is fully bilingual including the virtual collection and the database on artists, their education, bibliography, awards and exhibitions.

United Kingdom

Gathering the Jewels (<http://www.gtj.org.uk/>)

Description: The full contents of this website and the underlying database are bilingual in Welsh and English

Multikulti (<http://www.multikulti.org.uk/>)

Description: This is an online information service that provides advice, guidance and learning materials in 13 community languages. The full contents of the site are available in each language. The website itself has been developed using Unicode to support non-Latin scripts but advises users that there may be some difficulty in viewing certain language texts, particularly Bengali, Farsi and Gujarati and, for these languages PDFs are delivered as well as Unicode text.

3.2.2 Best practices of multilingual websites with free text indexing

Czech Republic

Museum of Puppets in Chrudim (<http://www.puppets.cz/>)

Description: This website is available in 6 languages, although it does not provide sophisticated search facilities, (Czech, English, German, French, Dutch, Italian).

Estonia

Estonian National Museum (www.erm.ee)

Description: The contents of the site are available in Estonian, English, Finnish and Russian (SSEARCH ONLY IN ESTONIAN, web the same for Estonian and English, less content for other languages)

France

Musée des Augustins (Toulouse) (<http://www.augustins.org>)

Description: [Quality and depth found of multilingual treatment \(French, English, Spanish\)](#)

The Collection of Great Archaeological Sites (Collection des Grands Sites Archéologiques)

Published by the Mission for Research and Technology of the French Ministry of Culture

(<http://www.culture.gouv.fr/culture/arcnat/fr/>)

Description: The availability in at least three languages: the websites from the collection of great archaeological sites (Collection des Grands Sites Archéologiques) published by the Mission for Research and Technology of the French Ministry of Culture, about the Chauvet cave (<http://www.culture.gouv.fr/culture/arcnat/chaufvet/fr/>) Spanish, English, French, the Man of Tautavel (<http://www.tautavel.culture.gouv.fr>) Spanish, English, French) and Life along the Danube (<http://www.culture.gouv.fr/culture/arcnat/harsova/fr>) English French and Rumanian

The City of Carcassonne (<http://www.carcassonne.culture.fr/>)

Description: The volume and the level of the vocabulary processed: the Unifrance website allows a search in its database about cinema through a number of lists of terms which add up to more than 10 000 terms in four languages while the website of the City of Carcassonne offers a terminological analysis in three languages of the technical terms that are used.

Underwater Archaeology (from the collection of great archaeological sites published by the Mission for Research and Technology of the French Ministry of Culture) (<http://www.archeologie-sous-marine.culture.fr/>)

Description: The processing of non-European languages: the website devoted to Underwater Archaeology (from the collection of great archaeological sites published by the Mission for Research and Technology of the French Ministry of Culture) is available in Arabic

Germany

Virtual Library of Contemporary Art ViFaArt - makes available ArtGuide, a catalogue of annotated Internet sites. (<http://vifaart.slub-dresden.de>)

Description: The site offers German and English language systematic for geographic regions, time and “source” types, as well as alphabetical subject headings for content documentation and linguistic labeling in English and German

Greece

Benaki Museum (www.benaki.gr)

Description: Makes its collections available using a bilingual Greek-English vocabulary.

Museum of Cycladic Art (www.cycladic-m.gr)

Description: Makes its collections available using a bilingual Greek-English vocabulary.

Hungary

The Hungarian Museum of Ethnography (<http://www.neprajz.hu/english/index2.html>)

Description: A spectacular cultural site, which provides information in 3 languages, and offers virtual exhibitions with high-resolution pictures. (English, Hungarian, German)

Embroidered Egg collection (<http://datan-datenanalyse.de/Tojas/index.html>)

Description: The information provided is quite limited, because of the size of the museum. 8 language interfaces

Israel

The Knesset

(<http://www.knesset.gov.il>)

Description: The Archives of the Parliament of Israel can be searched on the multilingual website in Arabic, Hebrew, English. Although completely trilingual, the website allows different search capabilities for each language

Ghetto Fighters' House: Holocaust and Jewish Resistance Heritage Museum

(<http://gfh.org.il/eng/>)

Description: The museum has a multilingual website Hebrew, English, French, Russian, Arabic, searching of the archives in Hebrew and English.

Italy

Superintendence of Venice (www.soprintendenzave.beniculturali.it)

Description: Web site is available in 8 European languages; a searchable database is available only in Italian for the photo archives.

Ladin Cultural Institute (<http://www.istladin.net/web/default.asp>)

Description: Web site available also in Italian, German, English.

Civic network of South Tirol (http://www.provinz.bz.it/index_i.asp)

Description: Web site available in Ladin, Italian, German, French.

Slovene research Institute of Trieste (<http://www.lscmt.univ.trieste.it/slari/Homepage.htm>)

Description: Web site of the, available in Slovene, Italian, and English

Region Valle d'Aosta (<http://www.regione.vda.it/default/i.asp>)

Description: Official web site in Italian and partially in French.

Netherlands

The Royal Library (<http://www.kb.dk/index-en.htm>)

Description: English and Dutch website. Site offers search pages and some support in English.

The International Institute of Social History (www.iisg.nl)

Description: Site of institution offers search pages and some support also in English

The Rijksmuseum (www.rijksmuseum.nl)

Description: Site in Dutch and English with visitor information additionally in German, French and Spanish.

Norway

Bazar (<http://www.bazar.deichman.no/>)

Description: is a website for language minorities in Norway and is available in 14 languages and is a unique possibility to reach language minorities in their own language on their own premises. Bazar is developed and run by the Multilingual Library with funding from ABM-utvikling.

Vadsø museum has a multilingual website

(<http://museumsnett.no/alias/HJEMMESIDE/vadsomuseet/>)

Description: about the museum, local history and the Kvens. The text is in Norwegian, English and Finnish/Kven.

Kulturnett Troms (<http://troms.kulturnett.no/samegillii/>)

Description: is part of Kulturnet.no (the "website for culture in Norway"), run by ABM-utvikling on behalf of the Ministry for Culture and Church Affairs. Kulturnett Troms – is multilingual sami and Norwegian.

[Sami radio, run by the Norwegian non-commercial broadcasting company, has a multilingual website](http://www.samiradio.org/) (<http://www.samiradio.org/>)

Description: in North-sami, Lule-sami, South-sami and Norwegian.

[The Sami parliament runs a website](http://www.samediggi.no) (<http://www.samediggi.no>)

Description: with information about sami politics and government, but also information to the citizens from health to culture. It is in Norwegian and sami.

Poland

[The Malbork Castle Museum](http://www.zamek-malbork.pl) (www.zamek-malbork.pl)

Description: 100% available in English and German with searching in both languages.

[The State Archive in Siedlce](http://www.archiwumpanstwowe.siedlce.com/index.html) (www.archiwumpanstwowe.siedlce.com/index.html)

Description: 80% available in English and French.

[The State Archive in Plock](http://www.archiwum.plock.com) (www.archiwum.plock.com)

Description: 80% available in English and Russian.

[BWA Gallery in Bydgoszcz](http://www.bwa.bydgoszcz.com) (www.bwa.bydgoszcz.com)

Description: 100% available in English and German.

[Katarzyna Napiórkowska Art Gallery](http://www.galeriakn.home.pl) (www.galeriakn.home.pl)

Description: 90% available in English and 70% available in German and French.

Slovenia

[Narodna galerija \(National Gallery\)](http://www.ng-slo.si/) (<http://www.ng-slo.si/>)

Description: is the main art museum in Slovenia containing the largest visual arts collection from the late medieval period to the early twentieth century. The information on collections, exhibitions and events is bilingual in Slovene and English and in some cases also German. There are two databases (Art in Slovenia, European Paintings) containing digital images of paintings and sculptures as well as the description of artifacts available on the National Gallery web pages. The search interface and the descriptions are available in Slovene language only.

[City museum of Ljubljana](http://www.mm-lj.si/) (<http://www.mm-lj.si/>)

Description: is a comprehensive museum storing the material evidence of human existence in the area of the Ljubljana (Slovene capital) of the last five millennia. The museum keeps several hundred thousand artefacts which testify to the history of the city and the people who lived and worked there. The web presentation of the museum matches almost all quality principles criteria. It is fully bilingual in Slovene and English including the small database of the museums digital collection, called virtual room.

[The Architecture Museum of Ljubljana](http://www.arhmuz.com/) (<http://www.arhmuz.com/>)

Description: is the central Slovenian museum for architecture, physical planning, industrial and graphic design and photography. The museum collects, stores, studies and presents material from these areas of creativity at temporary and permanent exhibitions. The museum covers the entire history of these activities from the first human presence in the area of present-day Slovenia. The museums web presentation is attractive and fully bilingual. No databases of digitized content are available.

United Kingdom

[Milestones Museum](http://www.milestones-museum.com) (www.milestones-museum.com)

Description: This website is fully accessible to BSL (British Sign Language) users. BSL versions of the text are made available using video clips with captions to allow BSL users to absorb the information about the museum's collections on the website.

4. Conclusions

After the recent enlargement of the European Union in 2004 we became a part of a huge multicultural community of 25 countries. To take an advantage of the union of Europe, joint work between member states is most important. The number of European projects is growing and more and more cooperation should be attempted. To achieve an efficient collaboration, we should get to know each other's culture, tradition, and regulations. This may take time, but it is useful to learn the different customs, for otherwise we will fail in reaching common results.

In the scope of the MINERVA project, our common goal is to preserve the European cultural heritage and make it available through the Internet to the public. Although multilingualism is only one aspect of this, it is essential to the cultural institutions to reach a wider audience. Even though English is the "lingua franca" in the European Union, individuals have the right to use their mother tongue. So it is of great importance to provide information on institutional websites in different languages. Internet users can easily cross official borders and visit as many places virtually as they want. There is a telling reason for institutions to deal with many virtual visitors, because they can become actual visitors in the future.

In the 25 countries that make up the European Union currently there are 20 official languages and many other languages are spoken. But only 45% of European citizens are capable of taking part in a conversation in a language other than their mother tongue.

European citizens want to live in a socially inclusive society in which diverse cultures live in mutual understanding, building at the same time a common European identity. Language, together with shared knowledge and traditions is an important part of an individual's cultural identity. The diversity of languages, traditions and historical experiences enriches us all and fosters our common potential for creativity. Respect for linguistic diversity constitutes one of the democratic and cultural foundations of the EU, recognised by the « European Charter of fundamental rights » in article 22. The « Council resolution on linguistic diversity » of 14 February 2002 recognised the role of language in social, political and economic integration

In the field of heritage, multilingualism is of significant importance in making information available to as wide an audience as possible and to overcome language barriers. Multilingualism plays a strategic role in the quality and effectiveness of communication on the Internet. Multilingual exchange of information is of interest for cultural tourism to reach visitors from neighbouring countries and therefore for the attractiveness of different territories and their economic development.

Whilst policies and initiatives aimed at preserving languages are the prime responsibility of the Member States, European action can play a catalytic role at the European level adding value to the Member States' efforts. The development of multilingualism on the Internet has been stimulated in the last years by the European Commission by the support of trans-national projects, fostering partnership between digital content owners and language industries. The New Framework Strategy for Multilingualism adopted in November 2005 by the European Commission underlines the importance of the multilingualism and introduces the European Commission's multilingualism policy : three aims are pointed out :

- to encourage language learning and promoting linguistic diversity in society;
- to promote a healthy multilingual economy, and
- to give citizens access to European Union legislation, procedures and information in their own languages."

Supporting high quality multilingual resources still needs to be enhanced. The Minerva Plus pan-European survey will be of great interest and has already allowed us to point out best practices that will help to provide standardised solutions and shared knowledge in future.

The Minerva Plus results also highlight reasons for multilingualism in the different countries including: self-presentation, protection of minorities, cultural heritage, support for regional development and tourism, scientific and cultural exchanges.

A continuation of this work would be helpful in working towards an inventory of existing mature linguistic tools, resources and applications as well as qualified centres of competence and excellence. Language technologies are both an essential tool for safeguarding Europe's rich cultural heritage and a source of future economic growth. As new language technologies develop they will make Europe's cultural heritage available to all, irrespective of language or location. This will be a boon to Europe's cultural industries, helping to unlock the vast resource that is European culture, art and history. Language technologies in short are essential to ensuring that all European languages – and the culture, art and history with which they are inextricably entwined - maintain their place in tomorrow's globalised, interconnected world.

Europe's experiences in multiculturalism and multilingualism represent an enormous strength. European cultural institutions should be able to exploit to position themselves in the new digital sphere of the information and knowledge society.

5. Future perspectives

As we have already introduced from different approaches, it is getting more important to *think multilingual*. Due to the quick development of the Information Communication Techniques, there are more and more tools, and facilities provided to support activities in the multilingual environment - especially on the Internet. Besides the new inventions, even traditional tools, like thesauri, can be implemented within electronic environment.

The number of thesauri all over the world can hardly be estimated, but we are quite sure, that almost every subject area has already been covered with one - in different languages. The best approach is to identify those thesauri, which are currently in use. The results of our survey, and the testimony of the country reports suggests, that several countries have very positive attitudes towards multilingualism, but limited uptake of controlled vocabularies. This reflects the lack of availability of multilingual thesauri for many EU languages and the scale of the work that's needed to offer this level of support.

So our suggestion within European context would be, instead of supporting the creation of brand new thesauri, it would be more useful supporting the translations of the well-tried, European wide used thesauri: like UNESCO, HEREIN, ICONCLASS, Library of Congress Subject Heading List on the European Commission level.

It would be useful to create a website for European multilingual thesauri, with the assistance of international standardization bodies, which would be a good information base for cultural institutions. The best practice examples, and the freely available thesauri could be highlighted there. It would be challenging to discover the black hole of those countries, from where we haven't got enough information on controlled vocabularies. More emphasis should be placed on developments of cross-language search facilities based on multilingual thesauri.

The thesauri developed internally by cultural institutions are a valuable asset both on a national level and an international level. By identifying the currently available thesauri and standardizing their multilingual qualities, these thesauri can serve many other institutions in the future. It would be also important, to prepare quality testbeds for existing thesauri, and discovering more evaluation methods, which could help the institutions to decide which one is convenient for their purposes. During the joint work only the Israeli working group used an evaluation method for their thesauri, the GLYPH criteria³¹. It would be our second recommendation for the future for international experts to test and evaluate the GLYPH criteria and other quality check techniques, and then to publish as an international working methodology - for testing websites that implement thesauri (rather than websites that host standalone thesauri).

The international survey results of WP3 and its resulting knowledge of available thesauri would be best harnessed to serve the cataloguing needs of other national and international cultural institutions with the hope of allowing freely accessible content in the languages of all European Union constituents.

31 See Annex 1: Definitions

Annex 1: Questionnaire

Survey of Multilingualism Cultural Sites and multilingual thesauri in the MINERVA countries

Each institution registering its controlled vocabularies should fill only once this page. Additional pages are available, for each one of the vocabularies registered, and they may be added and filled as necessary.

Submitter

1. Name of submitter (your name):
2. Your e-mail address:
3. Your phone number including country and area code:

Institution/Corporation that maintains the cultural website

1. Name of the Institution:
2. Address:
3. Phone:
4. Fax:
5. Web site(s):

- I. Is your website available in any other languages than the original (national) language?

☐ Yes/ ☐ No/

If Yes, please indicate the languages (tick more, if relevant)

English	<input type="checkbox"/>
German	<input type="checkbox"/>
Italian	<input type="checkbox"/>
French	<input type="checkbox"/>
Hebrew	<input type="checkbox"/>
Portuguese	<input type="checkbox"/>
Russian	<input type="checkbox"/>
Spanish	<input type="checkbox"/>
Other.	<input type="checkbox"/>

If other please specify:

Is all information available in other languages, or just the part of it?
Please indicate in what proportion are the languages to each other on your website.

Original language: _____	Percentage: _____ %
Second language: _____	Percentage: _____ %
Third language: _____	Percentage: _____ %
Fourth language: _____	Percentage: _____ %

Do you use any tools for information retrieval on your web site?

☐ Yes

☐ No

If you answered No, please return only the upper part of the questionnaire.

If you answered Yes, please fill out the rest of the questionnaire.

.....

The following fields are the basic information required for each vocabulary.

1. Name given to the vocabulary: _____

Commento [R.1.3]: A szótár neve

2. Owner of the vocabulary: _____

Commento [R.1.4]: A szótár tulajdonosa

a. Administrator/contact person: _____

Commento [R.1.5]: A rendszergazda/ kontaktszemély

b. Email for the contact person:

c. Phone of the contact person:

d. Fax of the contact person:

[This question should be filled only once if the same contact person is in charge of several vocabularies]

3. Contributors (people and/or organizations):

4. Language in which this vocabulary description is given:

Official language of the Member State –

Second language/s

English	<input type="checkbox"/>
German	<input type="checkbox"/>
Italian	<input type="checkbox"/>
French	<input type="checkbox"/>
Hebrew	<input type="checkbox"/>

Portuguese ☐
Russian ☐
Spanish ☐
Other. ☐
If other please specify:

5. Type of vocabulary:

- a. Simple vocabulary or value list ☐
b. Classification or Taxonomy ☐
c. Thesaurus ☐
d. Ontology ☐
e. Glossary, or terminology ☐

4. Coverage; to which areas does the vocabulary refer? (Ex.: area: social science, sub-area: psychology, criminology, sociology, etc.)

7. If the vocabulary is a simple and small list of terms, please provide them in the language of this entry. For example, a simple list of school age groups can be wholly inserted here.

8. Version: _____

9. Publishing date of this version of the vocabulary:

10. Updating: how frequent is the vocabulary updated?

11. How many terms (lexical units) contains this vocabulary?

- ☐ 10 or less
- ☐ Between 11 and 100
- ☐ Between 101 and 500
- ☐ Between 501 and 1000
- ☐ Between 1001 and 5000
- ☐ Between 5001 and 10000
- ☐ 10001 or more

12. Which thesaurus features are supported?

- a. Narrower term / Broader term ☐
- b. Narrower term abstract / Broader term abstract ☐
- c. Narrower term partitiv / Broader term partitiv ☐
- d. Narrower term casual / Broader term casual ☐
- e. Related term (or 'See also') ☐
- f. Use/Used for (or 'See') ☐
- g. Use OR ☐
- h. Use AND ☐
- i. Top term ☐
- j. Other relations ☐
- k. Scope Note ☐
- l. Other (special) notes: use notes, date of entry ☐

13. How is the controlled vocabulary available?

- a. Paper copy version ☐
- b. Diskette ☐
- c. CD Rom ☐
- d. Local Network ☐
- e. Commercial Database Provider ☐
- f. Through the Internet. ☐

Please provide the URL (Internet Address):

14. Specific context. Please indicate the target populations that are expected to use the vocabulary.

- a. School ☐
- b. Higher Education ☐
- c. Training ☐
- d. Library ☐
- e. Archive ☐
- f. Museum ☐
- g. Other ☐

If other, please specify:

15. Technical or other requirements for using the vocabulary

14. Intellectual property rights and conditions of use

Free to use the vocabulary or incorporate it in your application	<input type="checkbox"/>	
Free to change and use an altered version	<input type="checkbox"/>	
Free to distribute altered versions	<input type="checkbox"/>	
Free to distribute unaltered	<input type="checkbox"/>	
Free to use the vocabulary browsing tools (if applicable)	<input type="checkbox"/>	
A redistributed or modified vocabulary has the same rights	<input type="checkbox"/>	
A reference to the copyright owner is required	<input type="checkbox"/>	

15. Costs for obtaining or using the vocabulary

- Minimal (free downloadable or only distribution costs) ☐
- A small fee (e.g. less than 100 euro) ☐
- Commercially-priced ☐

Additional information on costs:

Complementary Information

The following fields ask for optional information regarding the registered vocabulary. They concern vocabulary standards that may have been followed and related metadata sets.



16. Which thesaurus or other vocabulary standards are followed; e.g. ISO 2788, ISO 5964, ANSI/NISO Z39.10-1993:

19. Standardization bodies that are endorsing this vocabulary:

20. The attached file that provides links to Metadata sets used in the context of libraries, archives and museums.

While registering your controlled vocabulary, in case it is appropriate, please indicate to which of these Metadata set and elements the vocabulary you are registering gives values.

- a. LOM elements:
Learning Object Metadata
- b. DCMI elements:
Dublin Core Elements
- c. EAD elements:
Encoded Archival Description
- d. MARC elements:
Machine-Readable Format
- e. ISAD (G) elements:
International Standard Archival Description
- f. VRA, Version 3.0 elements:
Visual Resource Association

Other: _____

DEFINITIONS

Additional definition of terms used in the Minerva Israel survey

Graphic Lexicon Yielding Published Hyperlink (GLYPH) – A set of criteria (defined below) established to evaluate multilingual controlled vocabularies, the format for cataloguing terms, the accessibility of the term lists, the additional of visual or multimedia aids - independent of language – that help define the terms and the vocabularies level of translations

Controlled vocabulary is a lexicon built in a linear format. This list is similar to subject headings and includes pre-coordinated terms. Searches are performed by choosing from a list (facets). Example, Library Congress Subject Headings.

Thesaurus (1) Can be reflected as one word to many or **(2)** Can be more expanded and have classified terms set in a hierarchical manner. Searches may be performed by choosing from a list or by typing a free text (Boolean). This list includes post-coordinated terms. An example of a classified thesaurus – Getty's Art and Architecture Thesaurus.

Bi/ Multilingual GUI refers to the Graphic User Interface (GUI) on the front end. The user interface may be multi or bilingual while the controlled vocabulary may not exist or be monolingual and so this fact is noted.

Bi-directional. This is a specific issue pertaining to Semitic languages that differs from other languages in being read right to left. In most cases lexicons that are bi-directional can be opened in mirror image, an example of this could be reflected in the "search" button on the screen. The buttons that appear on the right for searching an English term would appear on the left to search for a, Arabic or Hebrew term.

Truly Bi / multilingual - Bi /multilingual parallel cells. If the lexicon is truly bi/ multilingual, the same number of results would be found if the term is searched in either language. The lexicon would also be able to act a translation tool. If the data were input in English, for example, the Arabic or Hebrew equivalent would fill in the parallel cell.

Integrated images – an image is provided to help express the meaning of a term.

The GLYPH System

A Grading System for Multilingual Lexicons (one point for each criteria)

GLYPH SYSTEM	GLYPH defined
Online	URL
Bilingual / Multilingual Lexicon	defines lexicon as bi or multi
Bi-directional	right to left and vise versa
Lexicon / Thesaurus / Classification	linear / one to many /hierarchical
Browseable lexicon access / Tree	terms accessible via browse
Bi / Multi Languages	The lexicon interfacing
Image/ multimedia	a visual aid
Bilingual parallel cells	same result in either language

Annex 2: International thesauri and controlled vocabularies

Iconclass

Iconclass is an international classification system for iconographic research and the documentation of images.

Library of Congress Subject Headings

(LCSH) (<http://www.loc.gov/cds/lcsh.html>)

The alphabetical subject headings system, known as Library of Congress Subject Headings (LCSH) was originally intended as a subject cataloguing tool for the Library's own use and began life in 1898. It currently contains over 220,000 terms based on the ISO-2788 standard.

LCSH now serves thousands of libraries around the world and has become the de facto standard for subject cataloguing and indexing. LCSH is the only subject headings list accepted as a worldwide standard and is the most comprehensive list of subject headings in the world. It provides an alphabetical list of all subject headings, cross-references and subdivisions in verified status in the LC subject authority file.

SEARS

The Sears List of Subject headings was developed by Minnie Earl Sears in 1928 and provides an alternative to LCSH for small libraries. It is less complex than LCSH with shorter headings and fewer subdivisions.

UNESCO Thesaurus

The UNESCO Thesaurus - available also on CD-ROM - is a controlled and structured list of terms used in subject analysis and retrieval of documents and publications in the fields of education, culture, natural sciences, social and human sciences, communication and information. Continuously enriched and updated, its multidisciplinary terminology reflects the evolution of the Organization's programmes and activities. The UNESCO Thesaurus contains 7,000 terms in English, 8,600 terms in French and 6,800 in Spanish.

Annex 3: Other initiatives

Italy

The EACHMED project, has developed a portal published by CNR (Italian National Centre of Research): www.eachmed.com. The project aims to make this site available in 32 languages, including Latin. It will implement a multilingual thesaurus about cultural heritage in the 32 languages produced by another CNR project, Progetto Finalizzato Beni Culturali (www.pfbeniculturali.it).

The Istituto di Scienza e Tecnologie dell'Informazione, Consiglio Nazionale delle Ricerche, Pisa coordinates the Cross Language Evaluation Forum (CLEF) <http://clef.iei.pi.cnr.it/>. CLEF develops the infrastructure for the testing, tuning and evaluation of information retrieval systems operating on European languages in both monolingual and cross-language contexts.

The Accademia Europea di Bolzano per la ricerca applicata e la formazione post-universitaria (www.eurac.edu) is member of the IST project SALT, Standards-based Access to multilingual Lexicons and Terminologies <http://www.loria.fr/projets/SALT/>, an open-source project that is producing ISO standards or contributing to revised ISO standards.

ITC-IRST Trento, with its [The Cognitive and Communication Technologies \(TCC\) division](#), takes part to the MEANING project (Developing multilingual web-scale language technologies), <http://www.lsi.upc.es/~rigau/meaning/meaning.html> concerned with automatically collecting and analysing language data from the WWW on a large scale, and building more comprehensive multilingual lexical knowledge bases to support improved word sense disambiguation.

Italian private companies are partners in the IST funded project MIETTA II, A Multilingual Information Environment for Travel and Tourism Applications www.mietta.info/.

Finland

Two official languages

Finland has two official languages: Finnish and Swedish. It is the governmental policy that common public services must be provided in both languages where appropriate. This guideline is followed by most public offices and cultural institutions. The websites reflect this principle although in some cases only a fraction of the content is provided in Swedish. Another indigenous language in Finland is Sami, which is spoken within the small community of Sami people in Lapland (also known as Lapps). There are websites, which offer also material in Sami, both sites linked to their culture and administrative websites.

English is commonly used

Finnish is very different from other larger European languages. This is why English is commonly used in cases where international contacts are judged essential. Commonly only a fraction of the website content is available in English.

Multilingual thesauri

The National Library of Finland maintains two different thesauri, which are both also available in Swedish. The Finnish General Thesaurus is called YSA and the corresponding translated one in Swedish is called Allårs. Finnish Music Thesaurus (MUSA) has also a Swedish translation (CILLA). These thesauri are available on-line and can be searched to find terms and navigate within

the thesaurus structure. There are links between the terms of the Finnish and Swedish thesauri.
<http://vesa.lib.helsinki.fi/>

Annex 4: Registered thesauri on the survey's website

http://www.mek.oszk.hu/minerva/survey/contr_vocs2.htm

Name	Coverage	Languages
Biologic Taxonomy	Names of species (Animals and Plants)	Latin
THESAURUS (of architecture)	Edifices and Furniture	French, English, American, Italian
THESAURUS (of religious objects)	Religious furniture and clothes	Italian, French, English
HEREIN (European Heritage Network) thesaurus	Architectural and archaeological heritage policies	English, French, German, Spanish, Bulgarian, Polish, Slovenian
MALVINE (Manuscripts and Letters via integrated Networks in Europe)	Manuscripts and moderns letters	German, English, French, Spanish, Portuguese
NARCISSE (Network Art Research Computer Image SystemS in Europe)	Preservation and restoration of paintings	German, Italian, Portuguese, French, English, Spanish, Catalan, Danish, Russian, Chinese, Japanese
UNESCO Thesaurus	Education; culture; natural sciences; social and human sciences; communication and information; politics, law and economics; countries and country groupings	English, French, Spanish
RAMEAU (Répertoire d'autorité-matière encyclopédique et alphabétique unifié)	Catalogues of libraries	French
PACTOLS (Peuples et Cultures, Anthroponymes, Chronologie relative, Toponymes, Oeuvres, Lieux, Sujets)	Sciences of Antiquity	French; Italian and English; German and Spanish
MACS (Multilingual Access to Subject)	Catalogues of libraries	German, French, English
Museum Images themes	art, architecture, sciences, technology, history...	english, german, italian, french, spanish
Museum Images Artist Names	Artist names	french, english
Museum Images Periods		french, english
Objektdatenbank, OPAC Bibliothek		german
Hessische Systematik		german
Allgemeines Künstlerlexikon		german
Thesaurus of Geographic Names		english, german, french
United List of Artist Names		english, german
Iconclass-Deutsch		english, german, french
Schlagwortnormdatei		german
PKNAD (prometheus KünstlerNamensAnsetzungsDatei)	Names of Artists	german
Seitendateien		german
Basisklassifikatoin		
Personennamendatei		
Gemeinsame Körperschaftsdatei		
Dewey Dezimal Klassifikation		
Universale Dezimalklassifikation		
Ethno-Guide:Type of Sources	Sourcetypes	english, german
Thematic Index		english, german
Regensburger Verbundklassifikation		english, german
Zeitraum	time period	
geografische Region	geographic subject	english, german
Quellentyp	Sourcetype	english, german,
Schlagwörter	subject heading	english, german
Econinfo	Area: social science ; sub-areas: economics, business and management, sociology,	hungarian, english, german

Hungarian Educational Thesaurus	political science, public administration, international relations, environmental area: social science sub-area: education science, psychology	hungarian, english, german, french,
Library of Congress Subject Headings in Hungarian OSZK Thesaurus	all subject areas	hungarian, english
Thesaurus of library and information science	social science, natural science, geographical names library and information science and some related fields, e.g. bookselling and publishing, computerization, history of books, printing and press etc.	hungarian
WebKat.hu tárgyszórendszere	Every discipline	hungarian, english
Alinari ambito culturale ATBD	architecture, art-history, archeological objects and sites	italian, english italian
autore - qualifica AUTQ	architecture, art-history, archeological objects and sites	lithuanian
autore - scuola d'appartenenza	architecture, art-history, archeological objects and sites	russian
Descrizione Iconografica DESS	architecture, art-history, archeological objects	italian
e-learning glossary	e-learning	
ICONCLASS IN ITALIAN	The iconography of the west art from the medieval period to the contemporaney art	italian, english, german, french, other: Finish
Materia e tecnica - oggetti d'arte - MTC	artistic objcets	italian
Materia e tecnica - archeological objects - MTC	archeological field	polish
Oggetto definizione - artistical objects - OA	artiscal objects	english, italian, french, portuguese, other: language only some sections of whole thes
Oggetto Tipologia - Artistic Objects - Oa	artistical objects	english, italian, french, portuguese, other: language only some sections of whole thes
ThIST (Italian Thesaurus of Earth Sciences)	Earth Sciences	italian, english
Tipologia dell'oggetto - Architectonical objects	architeconical area	italian, english, french,
ARTIST	ARTIST'S NAMES	russian, english
TITLE	TITLE OR NAME	russian, english
SCHOOL	ARTIST SCHOOL	russian, english
STYLE	STYLE OF ARTWORK	russian, english
TYPE OF ARTWORK	STYLE OF ARTWORK	russian, english
COUNTRY / ORIGINAL	country where the artwork was created	russian, english
THEME	the domain in which a searcher is interested	russian, english
GENRE	ICONOGRAPHIC GENRES	russian, english
PERSONAGE	ICONOGRAPHY: PERSONAGE REPRESENTED BY THE ARTWORK	russian, english
PAINTERS	names of painters connected with the creation of works of art	russian
Special terms	TECHNIC OF CREATION AND RELATED NOTIONS	russian
Vocabulary of fine arts terms	painting technique and appellations	russian
PLACE OF CREATION	country, town etc. where the artwork was created	russian
MANUFACTURE	factory, plan, lithography, artel, work association etc. that took part in the	russian

	creation of the artwork	
PERSONAGES	represented people, area of iconography	russian
MATERIALS AND TECHNIQUES	materials from which the object is done and techniques that was used for its creation	russian
THEMES	theme subdivisions of the museum	russian
FUNDS	museum reserves	russian
data element catalogue	The data element catalogue is supposed to cover objects from cultural history, photos, litterature, archaeology, theatre, industrial history, art history, technical history, buildings and environmental values	swedish
Art & Architecture Thesaurus - Nederlandstalig	material culture in general (with a focus on art history and archaeology)	dutch, english
ARENA Periods	Cultural Heritage	english, danish, norwegian, icelandic, polish, romanian
ARENA Top Level Themes	Cultural Heritage Sites and Monuments	english, danish, norwegian, icelandic, polish, romanian
AV/Webcasting search pilot tool		
Bilingual Welsh/English subject index	cultural heritage within Wales	english, welsh
Collection Subject Search		
Glossary	arts	
Scotland's Culture Theasaurus	All aspects of Scottish Culture	english
Subject search (indexed text search)	arts etc	
Term lists from TMS (e.g. object type)	arts	english
Thesaurus of Monument Types	Archaeology - specifically archaeological monuments in England	english
The Bar-Ilan University Controlled Vocabulary		Hebrew, English, French, Yiddish, etc
The Beth Hatefutsoth (Museum of Jewish Diaspora) Controlled Vocabulary	history, art, folklore, ceremonial art, architecture, Jewish life, Jewish music (liturgical, para-liturgical, traditional)	Hebrew, English
The Bibliography of the Hebrew Book, 1473-1960 Controlled Vocabulary		Hebrew, English, Ladino, Judeo-Arabic
The Center for Computerized Research Services in Contemporary Jewry Controlled Vocabulary		English
The Central Zionist Archives Controlled Vocabulary		Hebrew
The eJewish Controlled Thesaurus	Jewish studies, Israel	Hebrew, English, French, Russian, Spanish
The Hadashot Arkheologiyot – Excavations and Surveys in Israel online publication by Israel Antiquities Authority Controlled Vocabulary		Hebrew, English
The Haifa University Thesaurus	all subject areas	English
The Index to Hebrew Periodicals (Haifa Univ.) Thesaurus		English
The Israel Antiquities Authority List		Hebrew, English
The Israel Antiquities Authority Controlled Vocabulary	archeology, architecture, finds, periods of ancient Israel, periods of ancient Near East, etc, architectural elements of archaeological sites in Israel, archaeological periods of ancient Israel	Hebrew, English
The Israel Folktale Archive Thesaurus	folktales, folklore, folk-literature, literature, Jewish studies	Polish, Moroccan, Hebrew, Yemenite, Iraqi Arabic, Yiddish, Ladino, Tunisian Arabic, Kurdish, Russian,

		Farsi, Rumanian, Arabic - English planned
The IMAGINE Thesaurus	Artists, Materials, Object name, Keywords, Periods, Place and Technique. A special sub-table in the keywords table is the "Judaica and Ethnography categories"	Hebrew, English
The Jerusalem Virtual Library – The Academic Database On Historic Jerusalem Thesaurus		English
The Jewish National & Univ. Library, RAMBI, Index of articles in Jewish Studies Controlled Vocabulary	Jewish studies, Israel	Hebrew, English, Ladino, Yiddish, European languages
The Knesset Controlled Vocabulary		engsih, arabic, hebrew
The MALMAD - Israel Center for Digital Information Services Controlled Vocabulary		Hebrew, Arabic and English
The MOFET Institute Thesaurus		Hebrew, English
The Musical Library, Levinsky College Controlled Vocabulary	music	Hebrew, English
The Pro Jerusalem Society Controlled Vocabulary		English and Hebrew
The Steven Spielberg Jewish Film Archive Controlled Vocabulary		English
The The Aviezer Yelin archives of Jewish education in Israel and the Diaspora Controlled Vocabulary	history of Jewish education, Jewish schools, educators	Hebrew, English
The The Ben-Gurion Research Institute Controlled Vocabulary	David Ben-Gurion, State of Israel, Diaspora, Holocaust, Israeli wars, Israeli society, Zionism	Hebrew, English, etc
The The Henrietta Szold Institute Thesaurus	social sciences, education	Hebrew, English, European languages
The The Moshe Dayan Center Bibliographical Database Controlled Vocabulary		French Arabic and English
The The Tel-Aviv Museum of Art Controlled Vocabulary	Visual arts	Hebrew, English
The The Vidal Sassoon International Center for the Study of Antisemitism Controlled Vocabulary		English
The The Yad Ben Zvi Controlled Vocabulary		Hebrew, English, European languages
The U. Nahon Museum of Italian Jewish Art Thesaurus	history and art of Italian Jews	Hebrew, English
The Wingate Institute for PE & Sport Thesaurus	natural sciences, social sciences, humanities, sport, physical activity, physical education	Hebrew, English
The Yad Vashem Archive Thesaurus	geography, names	Hebrew, English, Yiddish, European languages
Archaeological Thesaurus compiled as part of the Luxembourg National Research Fund (FNR) 'Environment and Cultural Heritage' Project	Description of archaeological discoveries and results (various time periods, various categories of archaeological material), geological and geographical terms	Luxembourgish, French, English, German, Latin
Musée National d'histoire Naturelle – Service d'Information sur le Patrimoine Naturel / Institut Grand-Ducal section de linguistique	Nems of Plant and animal species of Luxembourg	Luxemburgish, French, german, english, latin

Other collection of thesauri and tools
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http://www.w3c.rl.ac.uk/SWAD/thes_links.htm