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About the CIPHER Cultural Heritage Forums

The CIPHER project was set up in April 2002 as a thirty month project supported by the European Union. The project aims to give the public new ways of accessing cultural heritage information from around Europe using new technologies. These technologies are intended to help organise knowledge and cultural heritage narratives. The technology will also help present these narratives on the internet and provide editing, communication and discussion tools. Visitors will be able to customise and add to these narratives using tools provided by the partners.

One of the principle activities of the project is the establishment of Cultural Heritage (CH) Forums. A cultural heritage forum is a portal website, in some cases associated with an actual place and concerned with some aspect of our shared cultural heritage. A CH forum allows all those interested in its content to explore, learn, interact with and add information to the site. The CIPHER partners are developing the technology, tools and methods for making successful and sustainable forums. These tools and technologies will be showcased and evaluated using a number of specific forums.

Initially there are to be four forums and these are;

Irish Cultural and Natural Heritage – explorer: this forum will use information from a database of Irish archaeology held by the Discovery Programme.

Nordic Heritage through Storytelling and Historical Artefacts: a forum built around the narratives represented in the Carta Marina, 1539.

Shared Heritage of Central Europe: this will provide online access to a large volume of data concerning historical sites in the Czech Republic and Austria.

Tradition of Technology Innovation in South Central England: a forum that will build on the historical record of the cryptanalysis done in Bletchley Park during the Second World War.

Each of these forums will be developed by the partners in their respective regions but will use methods and technologies developed by the other partners.



*Irish Cultural Heritage
Mooghan Hillfort, Co. Claire*

Who will use the Cultural Heritage Forums?

The forums are designed to provide an opportunity for everyone to become more involved in the heritage of their own and other's regions. However there are a number of groups who are envisaged as having particular interests in forums.

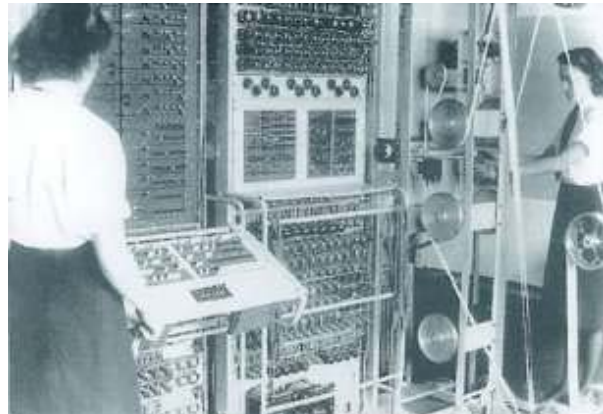
Communities of experts working in the humanities

We all share ownership of our heritage; however, there are groups of professionals who spend their working lives within the very broad area that can be described as cultural heritage. There are many interest groups throughout Europe who are described as stakeholders in Europe's heritage. Those working in anthropology, archaeology, art,

cartography, ethnography, folklore, humanistic computing, and museum studies all have an interest in increasing awareness and understanding of their domains. The forums provide the tools to support the research activities of professionals including inter-disciplinary collaboration. Virtual spaces will facilitate academic debate and publications within cultural heritage disciplines. It is also anticipated that local and regional governments will use these forums to promote understanding of the cultural identities of their regions.

Communities of educators and students

The forums are designed to provide tools and resources to teachers and pupils to learn about their cultural heritage and to communicate and discuss this heritage with others. School projects in history, art history, computing, mathematics and archaeology will be supported and schools will be encouraged to compare the heritage of their respective regions. Teachers are expected to use the forums to develop course materials and to create online educational curricula.



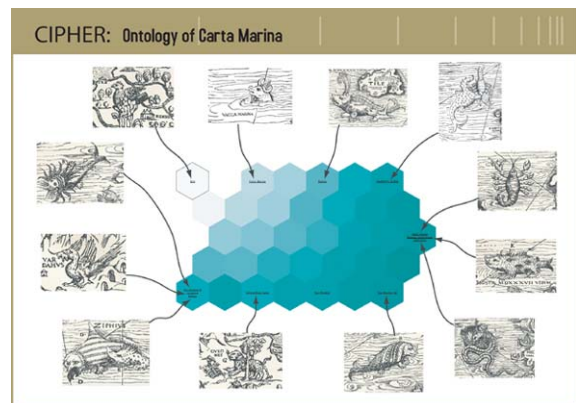
*Tradition of innovation in South Central England:
The Colossus computer*

Members of the public

Members of the public will be encouraged to use and contribute to the forums. This attraction will be cultivated through an effective communication campaign designed to deliver the message about the existence of these new local resources. The use of the forums will also promote interest in the development of tourism within the regions and increase visitor numbers to the heritage centres and sites highlighted by the forums.

Special interest groups

Many heritage domains have their own associated special interest groups. These would include local groups who would use the forum to explore historical and cultural narratives with the aim of expanding their own group’s knowledge. These groups can share their opinions and perspectives with a larger community. Historical guilds, societies, and expatriate groups with an interest in their ‘home’ region would fall into this category. These groups will find the forums of particular benefit as they will provide the tools for communication between dispersed members of the community.



*Nordic Heritage through Storytelling and Historical
Artifacts: Carta Marina*

Who is contributing to the forums?

The forums will start with specialist contributions from domain experts and will thereafter provide tools to help the forums to become self-sustaining. Visitors to the forums will include professionals, special interest groups, academics and members of the general public, all of whom are expected to make their own contributions. The first phase of contributors will include;

- Historical guilds and historical societies such as the *Guild Schwarzenberg* in the Czech Republic and Austria. These groups will supply knowledge and narrative that have been developed by local historians and enthusiasts. Traditional communities of interest such as these are expected to be core contributors to these forums.
- Professional users contributing to the forums in their pre-public phase and members of official committees dealing with the cultural background of various European regions.
- Regional and local government organisations concerned with the cultural life of the region. These and other non-governmental cultural organisations will use the forums as a medium for disseminating news about current cultural events in their region. The CIPHER tools will make a significant contribution to the aims of these bodies by promoting their heritage centre and sites and by helping coordinate the activities of professionals, enthusiasts and government.
- The *Discovery Programme* (DP) in Dublin is one of the partners in the project and the organisation which holds the largest body of Irish archaeological information in digital form. The DP will use the Irish forum - *EXPLORER* to increase accessibility to archaeological information and open up academic debate and discussion.
- Other forums focus on specific sites and groups and these groups will contribute directly to the 'core' content of the forums. For example *The Bletchley Park Trust* will provide historical narratives about Bletchley Park to the Tradition of technology innovation forum.



*Shared Heritage of Central Europe:
Hluboka Castle*

In each case the contributions of these groups will serve as a starting point for forums to become self-sustaining through the ongoing contributions of professionals, academics, special interest groups, students and members of the public.

What will the forums contain?

Specific examples of the information that will be held on the forums include (but will not be limited to) the following;

- The Irish forum concerns Ireland's archaeological past and includes the complete National Monuments Record (NMR). The NMR is a list of categorised and detailed monument data for Ireland and Northern Ireland showing, for example, a monument's geographical position. Importantly the forum will provide access to a large set of 'lessons' explaining and putting into context these monuments and artefacts.
- The history of the Nordic region is explored in the Nordic portal which incorporates the *Raisio Archaeology Archive*. The archive contains digital representations and narratives of approximately three hundred items related to the material culture of South-western Finland from the periods of the late Iron Age to early Middle Ages. The *Carta Marina* of 1539 - a map, which offers a comprehensive view of the life and

customs of the people of the Nordic region, will be available digitally as will the book the *History of the Northern Peoples* (1555).

- The English forum will contain content relating to the Bletchley Park Trust such as photographs of heritage artefacts, people and events. This forum will also include narratives explaining the role of Bletchley Park in wartime, as well as the important and interesting events that happened there. These include audio recordings giving personal reminiscences concerned with Bletchley Park. Graphical simulations and models describing the workings of important cryptographic technologies used before, during and after the war, will help to explain the work at Bletchley Park.
- The Czech / Austrian forum concerns the rural sacral architecture along the border prepared by local professional historians. The core content consists of an ontology that defines various types of heritage artefact, their purpose, typical location, decoration and many other properties. For each type of heritage artefact there exists several examples (e.g. a particular chapel located at the particular place) from the Czech and/or Austrian regions together with photographs of the artefacts.

In all cases these forums use innovative methods and technologies to organise and explain their respective areas. These include communication tools, editing tools and browsing tools, which will help visitors explore and add to the content. The forums also use new techniques to present narrative information in dynamic ways that will allow users to personalise their visit to the sites.

When will the forums be available?

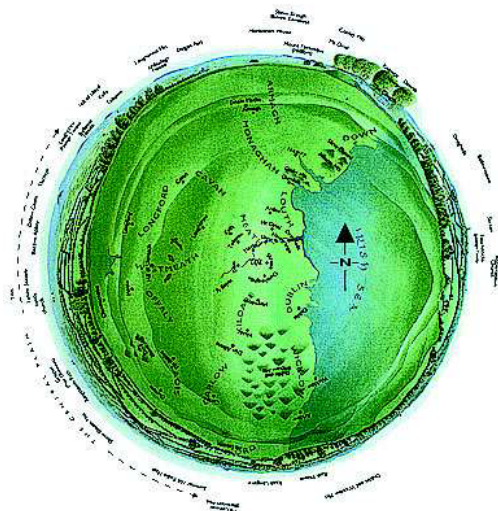
The forum trials will begin in early 2003. More information is available on the project website <http://www.cipherweb.org>.

The Irish Cultural and Natural Heritage Forum

About

Explorer.ie is the name of the Irish Cultural and Natural Heritage forum being set up as part of the European CIPHER research program. It will be a web portal for the general public, which will give access to a wide range of information from several cultural heritage organizations in Ireland. This information will illustrate aspects of Ireland's cultural heritage, such as, archaeological investigation and history.

The public will be able to explore, interact with, question and contribute to information and explanations available on the portal. Professional users, including archaeologists in government agencies and university academics, will provide the initial and continuing expertise and content for the portal. The site will give the public an opportunity to engage with heritage experts and also directly explore the wealth of heritage data that is currently difficult to find. Key components of the forum being prepared by researchers are the tools to explore the content and a set of narratives to give the data context. Using these tools, visitors to the site will be able to tailor the site's content according to their own interests and store their own narratives for later use or for sharing with others.



Irish heritage: View from The Hill of Tara

Who will use it?

Archaeological & Historical interest groups: There are many small and medium sized interest groups in Ireland who are involved in preserving Ireland's heritage. These include regional groups who would use the forum to explore historical cultural data with the aim of expanding their own group's knowledge and also to share their opinions and perspectives with a larger community. For example, the Royal Society of Antiquaries in Dublin is one such group who will be able to create specific narratives built from narratives and monument components provided by the forum.

Irish interest groups: This group of people would be similar to those mentioned above, but would be using the site to investigate aspects of Irish society, rather than simply historical perspectives. They would use the forum as a means for discussion and communication. An example would be the large number of Irish-Americans who feel an affinity for, and interest in, Irish cultural heritage.

Students and teachers: Many people study Irish culture and heritage as part of the school educational curriculum, or as a component of other courses. The forum will provide the necessary dynamic support structures to aid learning and to add fresh perspectives to existing knowledge. Different groups within this category will have different levels of familiarity with Irish heritage, the forum is designed to take these differences into account and tailor information accordingly. Students will be able to use the forum to help with educational assignments.

Members of the public: People planning, or who have taken a trip to a heritage site could use the forum to inform themselves about monuments, artifacts or historical settings. The forum will also allow visitors to reflect on a previous visit and to create their own annotated 'travel

log'. The forum will allow these personal narratives to be downloaded and perhaps delivered to a mobile device such as a mobile phone.

Who will contribute to it?

The site is designed to allow the public to explore and contribute to the development of Ireland's rich cultural heritage. Visitors will have the opportunity to tailor the way information is presented to them and also to discuss what they see and read with heritage professionals and with others who are interested. There are also other groups that are contributing to the way Explorer.ie will work and to its core content.

The Discovery Program: This organization holds the largest body of Irish archaeological information in digital form. The Discovery Programme will use Explorer.ie to increase accessibility to archaeological information and open up academic debate. In doing so they hope to raise the profile of Irish Archaeology and promote archaeological ideas and research to members of the public. The work done with The Discovery Programme will also be of use in helping bring about agreed standards for cataloguing archaeological findings.



Irish Heritage: The Mooghaun Hillfort

Dúchas (Government Heritage Service) the Heritage Council, Local Authorities and the National Museum: These bodies will use Explorer.ie to increase accessibility to their store of archaeological information and relate associated artifacts and monuments within their care and management to the content of the forum. Work done through Explorer.ie will contribute towards a set of standardized ontologies for Irish cultural heritage. It is hoped that this will increase visitor numbers to museums, monuments and heritage sites, and provide complimentary information for visitors to those sites. Explorer.ie will also provide opportunities for commercial aspects of Irish heritage to be promoted for example through ticket and merchandise sales related to aspects of Irish heritage, e.g. music festivals and historical tours.

Academic staff: Academics will use the forum to promote archaeological and historical ideas to members of the public. The forum will also act as a place where archaeological theories may be discussed, and where alternative ideas and narratives can be proposed. This process of discussion and debate will add a constant stream of new material to the forum.

What content will be available?

The Discovery Programme will be adding a large amount of archived data about Ireland's archaeological past. These include (but are not limited to) the following data:

National Monuments Record (NMR): The NMR is a complete list of the categorised monument data for Ireland and Northern Ireland. For example, the locations of all known ring-forts.

The National Museum Artefact Database: This is a complete list of categorised artefact data for Ireland and Northern Ireland. For example, finds of bronze-age tools.

Parts of the Ordnance Survey of Ireland dataset: This dataset will help show the positions of

finds and monuments.

The Discovery Programme will also have some detailed excavation data relating to four major research projects investigated over the past ten years including survey data providing detailed models of monuments. Some sites will include three-dimensional models which can be viewed through Explorer.ie. The forum will also give access to some of the extensive archive of illustrative and photographic images of monuments, artifacts and archaeological techniques. Finally and most importantly the forum will provide access to a large set of 'lessons' explaining and putting into context the large amount of monument and artifact information.

How will it be used?

Explorer.ie will use a variety of advanced technologies in the areas of knowledge visualization and management. It will provide an area for the public to learn about current excavation projects in their area, including up to date information about discovered artifacts and excavation progress. It will give academics a forum for the publication of recent archaeological and historical excavations and surveys.

It will have a Monument and Artifact search facility to allow users to find objects depending on their classification type, name, or geographic location. The Heritage lesson structure will allow users to explore both historic periods and historic themes. For example, there will be lessons on settlement. Users will be able to move between lesson themes while heritage narratives will be linked to monument and artifact records, and also to narratives explaining archaeological techniques, e.g. how excavations are run. The forum will have support tools for users to construct their own themed lessons by utilizing previously supplied lesson modules or to create their own. Discussion areas will allow interest groups to share information and generate new information related to heritage in their area.

The Carta Marina Cultural Heritage Forum

About

The Carta Marina Forum is a portal that can be used by heritage experts as well as the general public. The portal gives access to information regarding the history and myths of the people in the North of Europe. This knowledge is presented initially through the use of primary sources such as Olaus Magnus' Carta Marina of 1539 and The History of the Northern Peoples of 1555. The portal of the Carta Marina Cultural Forum is also linked to the physical world, part of its function will be to promote the cultural and educational activities of the Harkko Museum in Raisio, Finland.

The portal includes a digital facsimile of the Carta Marina, as well as an ontology for describing it. The portal also contains a digital facsimile of The History of the Northern People in English and Finnish. These digital facsimiles are being created following methods that support the use of self-organizing technologies. These visualization technologies allow the user to explore and discovery the information available through the portal. Secondary sources and interpretive documents created by expert scholars complement the primary sources included in the portal. Other digital objects, such as the Raisio Archaeology Archive, which have been created as part of collaborative projects with cultural heritage institutions in Finland and Scandinavia, are also included in the portal.

It is expected that the general public will be able to explore and interact with the information in the portal in different ways. The most obvious way is the traditional query method in which users, experts and non-experts alike, navigate through clusters of similarity and explore the materials included in the portal. More important, however, is how the tools will allow the users to create and contribute their own personal interpretation of the contemporary mythical narratives of Nordic region to the portal.



Nordic Heritage through Storytelling and Historical Artifacts: Carta Marina

Who will use it?

Communities of experts working in the humanities: Anticipated users of the forum include communities of interest working in areas such as anthropology, archaeology, art, cartography, ethnography, folklore, humanistic computing, and museum studies. These communities can be characterized as regional and international groups. They would use the forum's materials and tools as instruments to support their own research activities. Initially, it is expected that this support would involve more traditional tasks such as search and identification. More innovative approaches that make use of the portal in the creation of hybrid multidisciplinary media works will emerge, as these experts learn to use the tools provided and incorporate them into their working practices.

Communities of educators and students: It is foreseen that educators and students would want to use the portal to create customizable virtual exhibitions. In this context, it is foreseen that this community would use the portal as an instrument to drive further creation of virtual educational curricula. Because it will allow for students to create their own version of Carta

Marina and to incorporate many of the contemporary myths of the region, the portal will also provide an educational experience beyond that of traditional academia.

Members of the public: It can be expected that members of the general public might be interested in the Carta Marina Forum, perhaps as a way to familiarize themselves with the history and mythology of the region prior to an actual visit. More important is the anticipated role of the Carta Marina Forum to act as a catalyst for other groups to engage in similar work within the region.

Who is contributing to the Carta Marina Forum?

Initially, the portal is being created by a group of researchers in the Systems of Representation group at the Media Lab of the University of Art and Design Helsinki. They are working in the design of the portal itself as a space for collaborative endeavor that includes sophisticated tools for exploration and analysis, as well as high quality content materials, such as the Carta Marina and The History of the Northern People. For several years, the Media Lab has focused its research efforts on the area of digital cultural heritage. As part of these efforts, the Media Lab has developed strong collaborative relationships with national and regional cultural heritage institutions in Finland and Scandinavia.

The physical location of the Carta Marina CH Forum, close to the larger city of Turku that is an important center of culture in Finland, will help to develop and promote the two exhibitions and the symposium that will be held in the Harkko Museum.

Experts from University of Uppsala Library who are knowledgeable about the history of the content material are also working on the creation of the ontology for representing the Carta Marina. They will also be involved in the testing and validation of the tools created. In the near future it is expected that other communities of experts from the Harkko Museum in Raisio, and from higher educational institutions in Finland, such as the University of Turku, will be joining the group. All these groups will be instrumental in the testing of the tools created.

What content will be available?

Large amounts of data about the history of the Nordic region will be included in the portal. Initially the data can be divided as historical and contemporary materials. Among the items to be included in the historical section are objects of immense cultural value that have not previously been available in a digital format:

Historical data

- The Raisio Archaeology Archive (990-1400)
- The Carta Marina of 1539
- The History of the Northern Peoples 1555

Contemporary data

- Contemporary Myths from Scandinavia and Finland.

The Carta Marina CH Forum will provide a central location that is multidisciplinary in scope and nature, and oriented toward the Scandinavian and Baltic regions.

In addition to content materials, the Carta Marina CH Forum will also contain state of the art tools. These tools can be divided into four major categories:

Computer tools: These include resource organization, navigation and exploration instruments based on the use of self-organizing maps to cluster and visualize forum content. They can be divided into demonstration tools and personal tools. Using the Carta Marina and the History of the Northern People, the demonstration tools illustrate to the user how similarity mapping can be used effectively to organize large amounts of historical information. Following the

similarity-modeling paradigm, the personal tools allow the user to create customized representation of their information.

Vocabulary tools: These tools allow users to communicate by helping them to share a vocabulary and to learn about different meanings. The Carta Marina CH Forum includes a glossary. The controlled vocabulary from the Raisio Archaeology Archive will be added. This was created by archaeologists from the University of Turku. It covers the subject of the material culture of the Nordic region from the late Iron Age to early Middle Ages. Links to other similar tools that already exist, such as the Getty Institute's Art and Architecture Thesaurus and the Library of Congress vocabulary tools, will be added.

Methods tools: A method can be described as a systematic way of doing something. It is usually bound to a discipline or a particular field of knowledge. In CIPHER, different methods are used in different stages according to the task at hand. The Carta Marina CH Forum makes use of different methods to pre-process the materials so that they can be rendered into similarity cluster maps, such as Self-Organizing Maps (SOM). Descriptions of how Latent Semantic Indexing, (LSI), Self-Organizing Maps, and Random Vector Encoding (RVE) have been used in the processing of the contents of the portal, will also be included.

Collaborative design tools: These tools include the modeling tools, such as diagrams, flowcharts, and scenarios, used in the creation of the Carta Marina CH Forum.

How will it be used?

The Carta Marina CH Forum offers humanities computing scholars, educators, and other specialists, with an opportunity to learn about self-organizing technology and how it can be applied in the creation of humanistic knowledge. Additionally, the Forum contributes with a new proposal to the ongoing debate on the use of encoding methods in the creation of digital cultural heritage.

The Carta Marina Forum also provides the space for collaborative work for the diverse participants involved. Users are given the opportunity to customize their section of the web site according to their needs and desires. In this manner the Forum creates the possibility of bridging distances between the educator, the specialist, the local historian and the student.

Tradition of Technology Innovation in South Central England

About

We aim to encourage and support public participation in heritage through the development of cultural heritage forums, a kind of cultural web portal that enables active participation of communities of interest in a way that complements rather than replaces visits to physical cultural institutions. The cultural heritage forum described here is concerned with promoting an understanding of technology innovation in the areas of computing and cryptography.

A core focus of the forum will be the history of 'Station X', the cover name given to Bletchley Park, a Victorian Mansion used during the Second World War as a base for the UK Government Code and Cipher School. During the period of the Second World War Bletchley Park developed a number of technical innovations that have had a direct influence



Tradition of innovation in South Central England : Bletchley Park

on the technology of today. As such, the place and the innovations it produced are of national and international interest. Until recently the role of Station X was held secret. It was opened to the public as a national heritage park in 1993. The forum for the 'Tradition of Technology in South Central England' is intended to enable communities of interest to explore, research and share their perspectives on the history of computing and cryptography, including the heritage of Bletchley Park.

The forum will provide resources for the following envisaged groups of participants:

- Groups of school children exploring heritage in order to support the achievement of an educational outcome.
- Volunteer groups working for the trust to provide guided tours or maintain and man the exhibits.
- Special interest groups, such as groups of cryptography and computing enthusiasts, sharing and communicating information for intellectual and social purposes.
- Bletchley Park wartime staff and their relatives sharing stories and finding out other people's stories.
- Potential and recent visitors to the heritage park wishing to plan or reflect on their visit.

The type of information provided by the forum will include the official story of Bletchley Park as provided by the Trust, the personal anecdotes and advice of volunteer guides, and contributions from schools. The format of this content will include digitised movies, audio and pictures, suitable for access over the World Wide Web. The users of the forum will be able to view and search for heritage stories and other content, as well as contribute and describe their own stories and digital resources.

Who will use it?

Two trials are scheduled. During the first trial, two mini-forums will be developed, one for schools and a second for Bletchley Park volunteers.

The first mini-forum 'Schools Co-operating Through Exploring Regional Heritage ('SCOOTER'), provides support for schools across Europe to co-operate and share findings of their regional heritage studies. School projects in history, computing and mathematics will be reported upon, and each school will be encouraged to compare and contrast the heritage of their two cultures. Currently, teachers and pupils from two schools are involved in setting puzzles, asking questions, telling their stories, and profiling their individual interests. The teachers involved are seeking to use the mini-forum to support the pupils work in the following areas:

- Humanities, through exploring the differences between different cultures.
- Mathematics, to support the development of problem solving and logic skills, for example through the use of substitution ciphers.
- English, by further developing communication and presentation skills.
- Information and Communication Technology (ICT), through the use of technology as a means for communicating.

The second mini-forum being developed during the first trial will be aimed at Bletchley Park volunteers who provide guided tours of the park for visitors. The park currently has over thirty registered volunteer guides. The community of guides is specifically interested in sharing stories and news concerning the park, as well as offering advice and tips on presenting tours. For example, as new information that was previously held secret is released by the UK government's Public Record Office, the guides themselves are keen to see how this information supports or revises their understanding of the history of Bletchley Park. The site for Bletchley Park volunteers will facilitate the communication and co-ordination between volunteers, and between volunteers and the Trust.

Future trials will widen participation of the forum in the following ways:

- More schools will take part in the Scooter project, exploring a wider range of topics using different media.
- Special interest groups associated with Bletchley Park focussing on the history of computing and the development of cyptoanalysis technologies
- Members of the wider public, in particular visitors to the Bletchley Park heritage centre.

Who will contribute to it?

Contributions to the forum content during the first trials are expected from the following groups:

- The Bletchley Park Trust will provide the core history of Bletchley Park.
- School pupils and teachers will research and provide stories, questions, responses and puzzles.
- Bletchley Park volunteers will evolve an archive of personal stories and information on the Park and how to explore it.

After the first trial additional contributions will be sought from the following:

- Computing and cryptography interest groups will provide detailed investigations and discussions on their topic of interest extending key aspects of the core Bletchley Park archive.
- Visitors to the Park will develop and research their own topics of interest in

preparation for, or motivated by, visits to the heritage centre.

What content will be available?

The forum archive will contain a wide range of resources including:

- Photographs of heritage artefacts, people and events.
- Texts explaining the role of Bletchley Park in wartime, as well as the important and interesting events that happened there.
- Audio recordings giving personal reminiscences concerned with Bletchley Park.
- Graphical simulations and models describing the workings of important cryptographic technologies used before, during and after Bletchley Park.

How will it be used?

Visitors to the forum will be able to read stories about computing and cryptography in personalised ways, depending on their interests and preferences. Advanced tools will be provided for searching for interesting stories. For example, a visitor will be able to find stories that explain particular heritage items or events that they would like to explore. Special navigation tools will enable visitors to explore the archive of digitised heritage objects. For example, it will be possible to explore the objects from different perspectives, such as the events or people with which the objects were associated. On-line notebooks and story spaces will allow people to develop their own stories, making use of the items they have found.

Shared Heritage of Central Europe

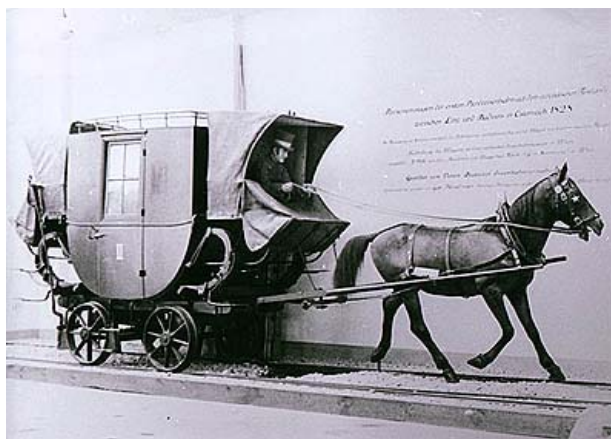
About

The Shared Heritage of Central Europe Cultural Heritage Forum is focused mainly on the communities of interest active in the cross-border region of Southern Bohemia and Upper Austria.

Who will use it & contribute to it?

Currently, there exist the following types of content providers, who are contributing or are going to contribute to the CH Forum by providing stories and related content:

Municipalities of the region: Chiefly those who are users of RIS Municipal Information System. They are located mainly in Austria, but several Czech municipalities in the region are interested in joining. It is expected that there will be direct links between the official Internet information systems of these municipalities to the CH Forum, which will help to bring visitors to the CH Forum.



The first railway in Europe between Ceske Budejovice (Czech Republic) and Linz (Austria)

- *Interests:* The users will be mainly citizens interested in the current cultural life and cultural heritage of their municipality/region, and visitors (i.e. tourists).
- *Motivation:* To promote local cultural events and heritage.
- *Visitors:* To select an interesting destination and to learn how to spend their time in the particular destination.
- *Skills:* Users with a rather low computer literacy have to be taken into account.
- *Community type:* Not a formally organised community, rather random virtual contacts through the portal can be expected.

Historical guild of Schwarzenberg: This is a traditional community of interest which has been active in the region since the beginning of the last century. It is active on the territory of former Schwarzenberg estates, which currently belongs to the territory of the Czech Republic and Austria. The guild has both Czech and Austrian members. It is aimed at promoting cultural heritage in the region. The Second World War interrupted its activity in the Czech territory for more than 40 years. The guild was publishing a journal entitled Tradice (English translation Tradition) before the war. They renewed their activity in the Czech Republic in 1990 and have started a new journal entitled Obnovená Tradice (English translation Renewed Tradition).

- *Interests:* In exploring and presenting cultural heritage of the cross-border region with a high emphasis on the period of common Czech-Austrian history. Also bringing Czechs and Austrians together by organising common cultural events.
- *Motivation:* To promote the region where they live, to improve quality of mutual relationships between Czech and Austrian citizens, including overcoming the language barrier, to maintain regional traditions to promote their activities to the public.

- *Skills:* Users with a rather low level of computer literacy have to be expected.
- *Community type:* Formally organised community, rich mutual personal contact.

Regional Historians in the region of Southern Bohemia: Dr. Hajek from the National Institute for Monument Care is coordinating a group of regional historians in Southern Bohemia.

- *Interests:* The users will be those who are interested in presenting their excellent knowledge of regional history to the public.
- *Motivation:* To promote the region where they live, possibly with the aim of making it more popular and attractive to tourists.
- *Skills:* Users with a medium level of computer literacy able to use more sophisticated tools, providing that they are intuitive and well documented.
- *Community type:* Not a formally organised community, mutual personal contact highly probable within the Czech or Austrian community. They would like to establish contact to similar Austrian communities through the CH Forum portal.



Mladikov chapel, an example of sacral architecture in Southern Bohemia

Art history students: A group of philosophy students from Charles University in Prague, and Palacky

University, Olomouc contacted the project partners and asked to become involved in the project trials after a project presentation at the EVA'02 workshop. This work will become the topic of their final year university dissertation.

- *Interests:* Interested in popularising the basics of art history namely to visitors of historical cities and monuments.
- *Motivation:* To apply their knowledge in creating a rather unique product, and to establish contacts with similar individuals and communities in other European countries.
- *Skills:* Users with a medium level of computer literacy able to use more sophisticated tools, provided that they are intuitive and well documented.
- *Community type:* Not a formally organised community, rich mutual personal contacts exist, contact to similar individuals and communities established through the CH Forum portal desired.

What content will be available?

The above communities are actively engaged in providing the following stories and related content to the CH Forum:

Municipalities of the region: The municipalities are also going to contribute to the CH Forum content by providing documents, photographs and other multimedia content related to their local cultural heritage and encouraging the participation of local communities of interest.

Historical guild of Schwarzenberg: The guild is going to actively participate in the CH Forum. Currently, they started to publish an electronic version of their journal at the CH Forum portal. By enabling discussion on a forum related to the journal, they want to attract a broader community of visitors and encourage them to provide their own stories to the portal, and start active exploration and presentation of local cultural heritage. They want to use the portal to encourage volunteers to translate interesting stories into foreign languages and

publish these translations on the portal.

Regional Historians in the region of Southern Bohemia: These historians have started their active participation in the CH Forum. They provided the forum with a story on rural sacral architecture along the Czech-Austrian border, which documents the common roots of this architecture in both countries. They have developed an ontology defining the typology of chapels and elements of rural sacral architecture in the region. The ontology is accompanied with photographs of individual monuments which serve as examples of individual types of monuments. The available material is ready for generating dynamic narratives as soon as the available tools are mature enough.

Art history students: Their short-term aim is to develop an ontology of concepts related to the facades of historical palaces. This ontology will also serve as an interactive dictionary of terms frequently used in architecture of historical palaces. Its aim is to enable tourists without specialist education in art history to recognise the most important facade decoration elements and to classify the palace into the respective architectural style. As a next step they plan to present stories of several of the most important palaces in the Czech Republic.

How will it be used?

The development of a software tool called RAT-O is underway at CTU. The tool is aimed at organising content elements, making semantic annotation and supporting the design of narratives for presenting relevant stories. The tool supports creating and maintaining content elements. It also supports the retrieval of the content elements, based on queries containing both simple keywords and references to annotated concepts or terms. The annotated concepts are considered as a higher-level type of keyword, which do not provide the keyword text, but rather its meaning.

The CH Forum will benefit from being loosely coupled to the information systems of municipalities. From the CH Forum stories references to the official web pages of respective municipalities will exist. Similarly, official web pages of the municipalities will refer to the stories of the CH Forum, which relate to the municipality.

At the current stage of the project, a story on rural sacral architecture along the Czech/Austrian border is available. The community of interest of professional historians has prepared it. The corner stone of the story is the ontology of rural sacral buildings, which defines various types of rural sacral buildings, their purpose, typical location, ground plan shape, roof type, decoration, and many other properties. For each type of rural sacral building there exist several instances (e.g. a particular chapel located at the particular place) from the Czech Republic and/or Austria. For each instance one or more photographs are available.

Currently, a script of the narrative is available. The narrative has a fixed structure, which defines various types of chapels. For each chapel type there is a container in the skeleton, which will be filled-in by a particular respective instance randomly selected in the archive. This scenario represents a simple case of a dynamic narrative, making possible to see the same story in a number of ways.

Each story in the CH forum will fall into one of a small number of basic types. Each of these will have a taxonomy associated with it that is able to describe the main aspects of the story and will be used as a basis for classification and personalization. The basic story types are as follows:

- Promotion of Cultural Events
- Promotion of local heritage
- Biography of historical celebrities

When developing the CH Forum portal, the following aspects of portal sustainability have

been taken into account:

Technical: To achieve technical sustainability, the following design principles are followed:

- Exclusively well standardised technologies are applied.
- The OKBC (open knowledge base connectivity) compliant knowledge model is applied.

Content: To achieve technical sustainability, the following design principles are followed:

- The content is kept apart from the presentation related aspects of the portal, making it possible to reuse the content and also adopt emerging presentation technologies in the future.

Financial: At the current stage, the following principals are followed to ensure the portal building, operation and maintenance costs are kept as low as possible:

- Open source software technologies are being used
- Technologies with low hardware requirements are applied
- Proper maintenance tools are being developed to reduce the requirements on qualified maintenance personnel.

In the future, the CIPHER team plans to develop a business model, which will be based on involving communities of interest related to the tourist industry (like regional travel agencies, hotel owners, or regional carriers), who will benefit from the portal and contribute to its budget.