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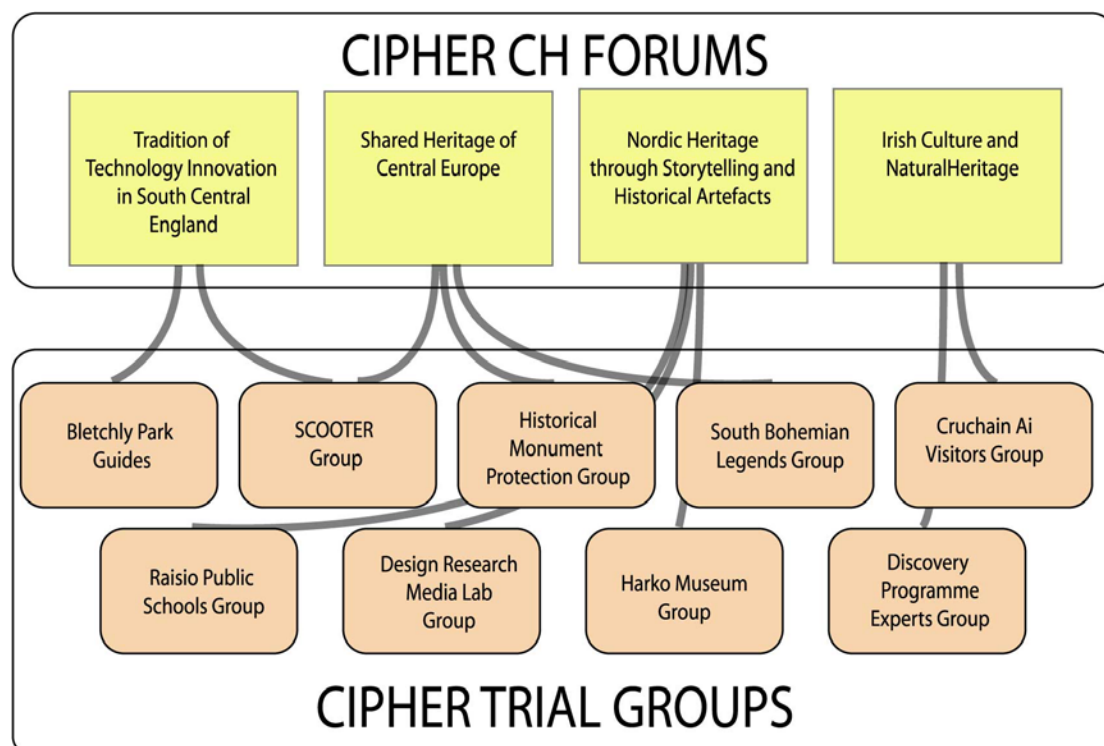
1 Executive Summary

CIPHER is a two and a half year project supported by the European Commission under the theme 'Heritage for All' that started in April 2002. An objective of the CIPHER project is to develop the methodology and technology required to realise sustainable Cultural Heritage Forums that empower communities of interest to explore, research and build content. A Cultural Heritage Forum is defined as an online space where people can participate and learn through accessing and contributing to a range of heritage resources organised around a common theme. Users of the Cultural Heritage Forum are therefore engaged as active participants rather than passive viewers. Cultural Heritage Forums have an associated region, which may traverse country borders.

The four Cultural Heritage Forums are:

- Irish Cultural and Natural Heritage. This CH Forum is primarily used for information from a large database of Irish archaeology held digitally by the Discovery Programme, one of the CIPHER Partners.
- Nordic Heritage through Storytelling and Historical Artefacts. A CH Forum built around the narratives represented in the *Carta Marina* (1539) and the book *History of the Northern People*.
- Shared Heritage of Central Europe. This CH Forum provides 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. This CH Forum will build on the historical record of the cryptanalysis work done at Bletchley Park, home of Colossus, the World's first programmable computer.

The first set of trials was conducted during the first half of 2003. These focused on identifying user groups within each forum, training, and deploying the first set of CIPHER tools within these communities. These trials obtained results that the CIPHER partners used to improve and expand the CIPHER software tools and methodology. With these improvements in place the second set of trials started in late 2003 and continued until July 2004. In total, nine communities participated in the second CIPHER trial.



This report presents the results and experiences of the Forum trials, together with a summary of the users' experience of them.

The second set of trials was conducted from the end of 2003 until July 2004. These focused on testing improvement and enhancements to the CIPHER tools and methodologies. The trials also expanded the number and range of users of the tools and forums. The improved tools included:

- Community Story Exchange (CSE) - a generic toolkit providing support for online storytelling in communities
- Apollo CH - a graphical ontology editor that allows people to define concepts and relations between them
- The Resource Annotation and Outline creation (RAT-O) tool – for the description and search of web resources, and the construction of narrative outlines.
- The Picture Annotation Tool (PAT)- PAT is a software tool aimed at annotating scenes in pictures. It enables the user to mark areas in a picture and to attach these areas with concepts defined in ontology.
- Story Fountain - intelligent support for the exploration of digital stories.
- Soft Ontology Layer (SOL) tool – for the lightweight description of historical artefacts.
- Automatic Description Engine (ADE) – an automated tool for the visualization of large textual corpora
- Exploring Carta Marina CH Forum: the trials involved the creation and testing of an organization, namely the Exploring Carta Marina CH Forum
- explorer.ie – for the publishing and indexing of archaeological lessons.

Nine communities participated in the second CIPHER trial and were able to use the CIPHER tools and methods to:

- Establish an online presence for a community.
- Build a community memory of heritage stories.
- Create and publish their own research.
- Visualise and cluster large sets of heritage data.
- Use mobile devices (telephones) to bookmark digital heritage resources.
- Develop formal classification schemes for their heritage domain.
- Classify and organise heritage resources around a common theme.
- Annotate picture resources
- Create 3D presentation for the web.

The CIPHER tools and methodologies are now in everyday use in a number of CH forums. The CIPHER approach to CH Forums has also been adopted by a number of organisations and projects, including Bletchley Park Guides, the Discovery Programme and the TArchNA Culture 2000 project.

2 Bletchley Park Guides

Bletchley Park is a heritage centre based in South Central England. During the Second World War the Park was the location of the British Government's Code and Ciphers School. Several historical events occurred at Bletchley Park at this time, including the invention of Colossus the first programmable computer. Since 1991 Bletchley Park has been open to the public as a heritage centre celebrating the innovative work done there in cryptography, computing and communications. A group of around 35 volunteer guides provide guided tours of the Park to visitors. The Bletchley Park Guides trial was aimed at building the support for the community of tour guides to allow their research on the history of the Park to be more easily shared and explored using the *Story Fountain* software. The Story Fountain software provides the tools dynamically link stories together

The second trial considered three aspects:

- The long-term functioning of the Guides community
- The integration of new functionality within the Guides CH Forum
- The provision of content developed and held by the Guides community for use by visitors.

In the second trial, as well as continuing with the previously established small group activities, two further aspects were explored:

- The first trial had identified the need to provide a range of collaboration models so that stories could be linked together in different ways. These were developed and tested within SCOOTER.
- More than 150 students and teachers from Denbigh School used SCOOTER as part of a creative writing assignment. The aim of this trial was to identify scalability issues that would need to be tackled for the software to be used on a bigger scale both within and between schools. A number of issues were identified concerning teacher moderation of large numbers of students' stories. These have been dealt with in the new version of the software.

2.1 Community description

Bletchley Park Guides

The primary role of the Tour Guides involves the provision of tours to visitors, conducting interviews with Bletchley Park wartime staff and their families, collecting newspaper articles related to the Park, and collecting and discussing new releases from the UK Public Records Office that shed further light on Bletchley Park's wartime activities.

Visitors

For those planning visits their interests will be loosely defined, but can be expected to focus on key exhibits, such as those on the Enigma and Colossus machines. For visitors reflecting on their visit, their interests will be more specialised, but may overlap with those of the established interest groups



2.2 Activities

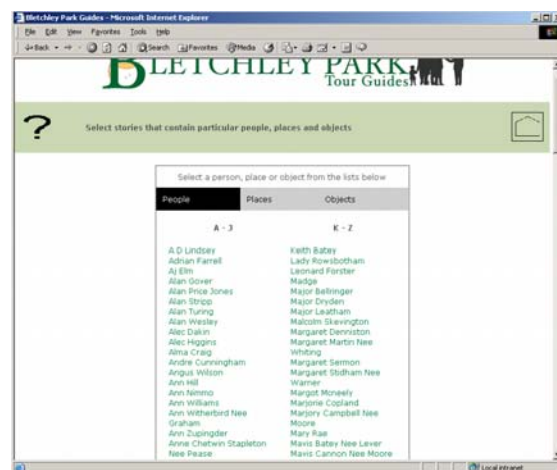
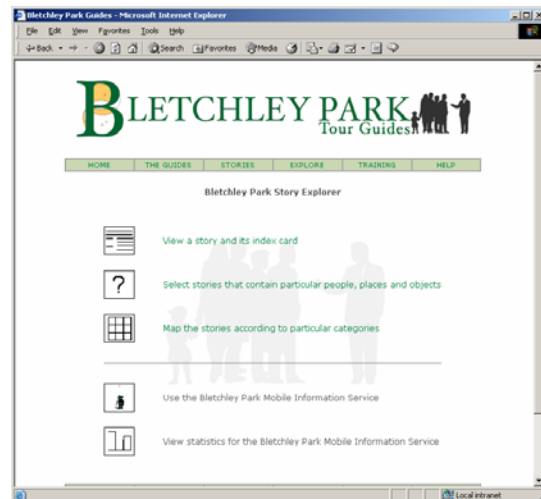


During the trial, the Guides were able to access the forum and mobile services either through their home computers or through a computer in Guides Room at the Bletchley Park Mansion House. The mobile information services allow visitors to bookmark items of interest during the tour using their mobile phones.

2.3 CIPHER tools

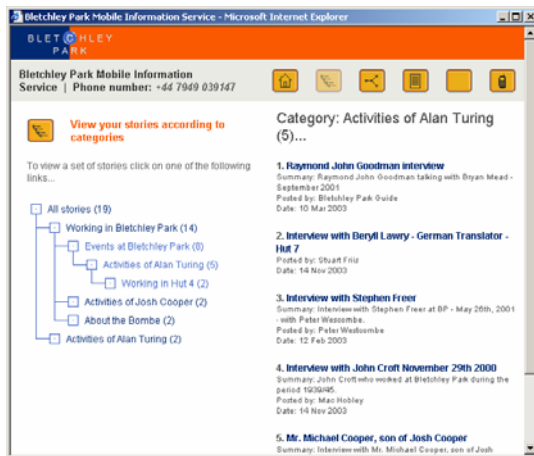
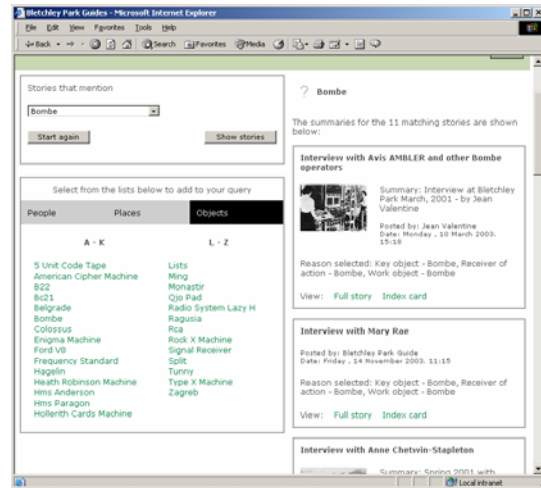
The Guides Story Fountain interface page has been simplified.

In the new version (see right) the Guide just selects the type of task they wish to perform and are then led through the selection of concepts in further pages. Each kind of exploration also now has its own logo that is used throughout as an aid to navigation.



The way concepts (people, places and objects) are selected has been improved to better scale. In the initial version, people, places and objects were selected via pull-down menus from the main page. This worked fine with the smaller story set, but there are already over 300 people mentioned in the interviews. Concepts are now selected from a separate page where the Guide can tab through people, places and objects (see left).

The way the content was presented could be overpowering and detract from what the Guide was trying to do. When viewing stories that matched a selected concept (e.g. Bombe) the matching event descriptions were shown in full (see left). In the new version just the reason for the story being retrieved is shown. Details can be viewed by selecting the "Index card" link.



The initial version of the Bletchley Park Mobile Information Service was tested in spring 2004 using Bletchley Park Guides. Using the powerful Bletchley Park Mobile Information Service concepts of interest (e.g. people, places, objects) can be sent my SMS. Later entry of the mobile phone number (see left) provides access to a personalised set of stories related to the submitted terms.

2.4 Outcomes so far

- 45 stories, mainly transcriptions of interviews, were contributed during the first trial. Now educational materials on decryption machines and Bletchley Park in the wider war context have been archived and 32 guides and two support personnel have entered their personal profiles into the online guides directory. The CH Forum now contains 127 stories. 77 of these are transcribed interviews.
- The forum is now regularly used to announce news, events and historical findings. Additionally the head and senior guides now use the CH Forum to disseminate news, events, and newly acquired historical documents.
- To support the exploration of stories a Bletchley Park ontology was developed by KMi based on the CIDOC Conceptual Reference Model for the first trial. The ontology has been expanded and now contains approximately 200 concepts and 1200 instances.
- 77 interviews have been described using this ontology.
- The Guides site is now used for other functions, such as marketing, visitor tracking and research, and product sales.

2.5 Further information

Contact: Trevor Collins (T.D.Collins@open.ac.uk)

3 SCOOTER

SCOOTER is an experiment in supporting online collaboration between schools. The first trial involved two schools, one in Milton Keynes, UK and one in Prague, Czech Republic. For the second trial this collaboration has continued. For example, one activity called “Place of the Week” involves students researching and visiting an area of local interest and presenting their findings to students in the other school.

3.1 Community description



The trial was run both as an after-school club and as a part of the school-day curriculum. The two schools involved in the trial were Denbigh School in Milton Keynes, and Gymnázium and Základní škola Jirího Gutha-Jarkovského in Prague, Czech Republic.

Students were interested in sharing local history stories, puzzles and creative writing. Participating in the trial provided an opportunity for cultural exchange, the development of ICT skills, and for the Prague school practice in the use of the English language.

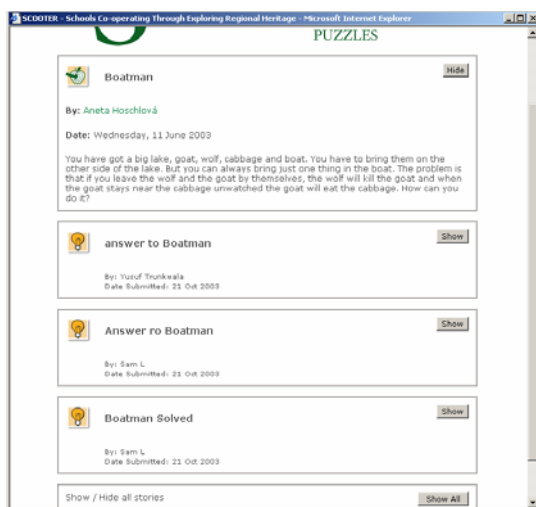
3.2 Activities

As the inter-school trial continued many more stories were contributed. It currently has 65 published profiles and 79 published stories.

Approximately 150 students submitted profiles and essays during the creative writing trial.



3.3 Collaborative model and creative writing testing



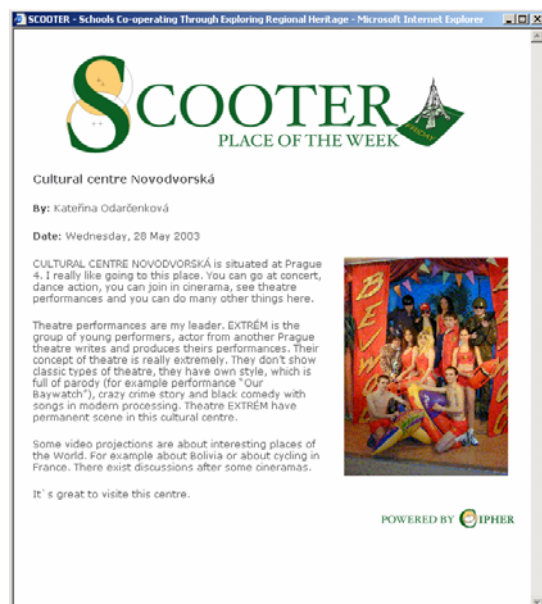
In a further experiment most of an entire year group at Denbigh School used SCOOTER as part of a creative writing task. Approximately eight teachers and 160 pupils took part in the trial. For the experiment, each class was first given an explanation of the SCOOTER project and what would be expected of them. They each then entered a profile into SCOOTER containing their name, likes, dislikes and optionally a picture. Although from a pupil perspective the trial was successful - the teachers identified a number of problems when they came to moderate and authorise the contributions of their students. The following improvements were felt to be needed:

- An easy way of accessing the essays completed in a particular class.
- A one-click moderation method for stories
- A two click method for modifying and publishing stories:

For the second trial, three different collaboration models were developed and tested.

These were:

- **Stand-alone** – Each story is independent of other stories in the archive. Example use: students write reviews of books or films that they have seen.
- **Chain** – Stories are written in a linear sequence. Each story is somehow motivated by, or is a continuation of, the previous story. Example use: Different students take it in turns to write a about a local place of historical interest. The next place selected is in some way associated with the previous description. Over time a chain of stories is formed.
- **Fan** – An initial problem or topic is set, inviting contributions, which might be solutions, poems, essays, or pictures. A plenary facility allows timed displays of answers, contributions and editorial comment. The plenary facility may be used to collate views of contributors as well experts. Example use: The teacher sets a topic for a creative writing task. Students submit their contributions by the deadline. The teacher writes a summary to be published with the set of contributions.



3.4 Outcomes so far

- SCOOTER currently contains 79 stories from the inter-school collaboration and 150 stories from the creative writing trial. Collaboration models to interconnect stories are now available.
- SCOOTER has mainly been used for publication rather than communication.
- Stories have been organised using the new collaboration models.
- Online synchronous events have so far not been carried out.

3.5 Summary of Bletchley Park and SCOOTER trial

The following lessons have been learned from the second trial:

- *CH Forum sustainability*: The approach taken in CIPHER can be sustainable. The forums studied in trial one are still active and building content.
- *Semantic exploration of resources*: The experiments with Story Fountain demonstrate that powerful tools can be successfully used for the semantic exploration of heritage resources.
- *Scalability for content exploration*: As the amount of content and the size of the ontology increased the Story Fountain interface needed to be redesigned. It can be expected that different interfaces will be optimal depending on the amount of content.
- *Reuse of CH Forum content for different audiences*: It is possible successfully to reuse and re-purpose community content for different audiences outside the community. The Bletchley Park Mobile Information Service provides content held by the Guides for use by visitors.
- *School publishing and collaboration*: SCOOTER software can successfully support school publishing and collaboration.
- *Importance of collaboration models*: In a story archive it is useful to provide different collaboration models such as "chain" and "fan" so that content can be organised in different ways.
- *Scalability for content moderation*: Moderation interfaces that are adequate for small submission rates may need to be redesigned if the moderator has a higher workload, such as in a school setting.

3.6 Further information

Contact: Trevor Collins (T.D.Collins@open.ac.uk)

4 Historical monument protection

The National Monument Institute is a Czech governmental agency whose remit covers the care of all heritage monuments and artefacts owned by the State. This involves their identification, registration, monitoring, maintenance and restoration. In addition, the Institute acts as an advisory body for monuments and artefacts in private ownership and also monitors the legal status of heritage objects in the country.

4.1 Community description

A number of regional historians associated with the National Monument Institute form the Historical Monument Protection community. This community consists of practitioners or amateur enthusiasts involved in the historical monument care. They are charged with the preservation of historical monuments, the promotion of cultural exchange, the presentation of regional history and explaining the historical way of living to tour groups.



4.2 Activities



During the trial 36 stories were collected and translated into English and German. The stories consisted of 19 legends and 17 narratives about regional history related to legends.

During the creation process about 230 'event' instances were created in the knowledge base.

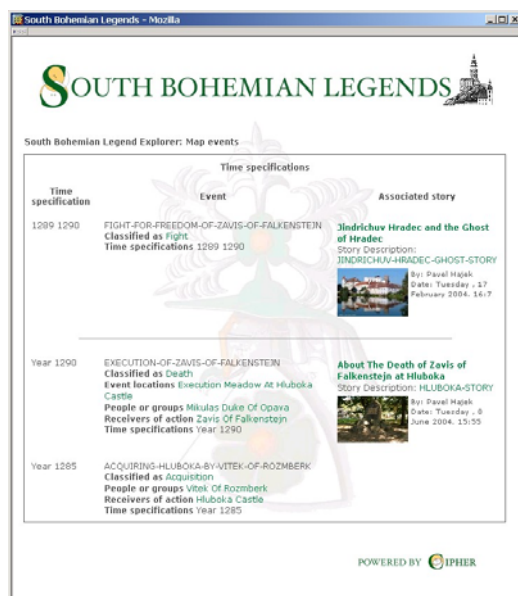
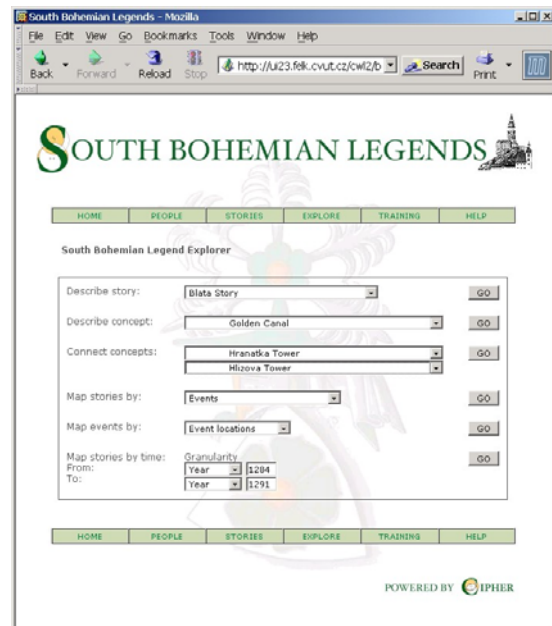
About 280 instances of the concept 'actor' were created, 100 instances of the concept physical-stuff, and about 180 instances of the concept place.

4.3 CIPHER tools

Community Story Exchange (CSE) - a generic storytelling environment originally customised for two quite different communities – Bletchley Park Guides and SCOOTER. For the purposes of the second trial, CSE has been extended and used to build up the *South-Bohemian Story Explorer*.

CSE Provides;

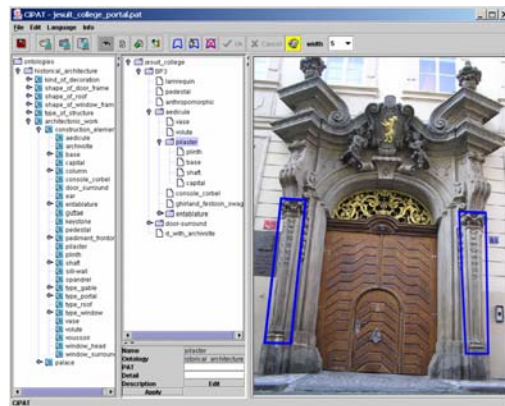
- Community presence/definition – a community home page that provides a summary of their activity and purpose.
- Profiles – this allows each member to provide a representation of themselves within the online community.
- Story writing – support for writing and submitting new stories.
- Story editing and publishing – support for editing, previewing and publishing stories in the community.
- Collaboration models – support for different models of how a set of stories fit together. Supported collaboration models include: chain (i.e. a linear list of stories), fan (i.e. one story being branched in a number of alternate directions) and stand-alone (i.e. each story being independent).
- Editorial and moderation model – facilities for setting access rights for different groups within the community, plus a supported moderation model (i.e. administration and approval of submissions).
- Story browsing – support for finding and viewing stories of different types within the archive.



Story Fountain - intelligent support for the exploration of digital stories. The suite of functions provided in Story Fountain together support the investigation of questions and topics that require the accumulation, association or triangulation of information across the story archive. Mapping temporal relationships across stories was introduced to the Story Fountain during the second trial. It enables users to explore relations such as what happened during 15th century, what happened between two specific dates, or what happened before a certain event. Story Fountain uses ontology and annotations created in the Apollo CH ontology editor. The Apollo CH editor is used to build conceptual models (or ontologies) of cultural domains. These ontologies are then used in applications which require semantic reasoning.

Resource Annotation and Outline Creation Tool (RAT-O) provides two basic functionalities:

- It supports annotating resources (within second trial mainly photographs related to the stories) identified by Uniform Resource Identifiers (URI) using structured annotation elements and at authoring narratives. Each of them can be either a simple keyword in a form of a character string, or a keyword associated with a concept expressing the meaning of the keyword. Annotations are based on ontologies created using Apollo CH.
- It enables narrative authoring with support of an archive of annotated resources.



Picture Annotation Tool (PAT)

The Picture Annotation Tool (PAT) is software tool aimed at annotating scenes in pictures. It enables the user to mark areas in a picture and to attach these areas with concepts defined in ontology.

4.4 Outcomes so far

During the second trial the CIPHER methodology proved to be applicable not only to the archive of stories of Bletchley Park guides, but also to a rather different community exchanging rather diverse legends and stories on historical content. This methodology was used to launch the South-Bohemian Story Explorer. The methodology has been further enriched with the experience acquired during the second trial.

The second trial did not exhibit any serious limitations, which would prevent customization to supporting additional needs of a community of interest. Its design is modular enough to enable further extensions such as the temporal reasoning engine, which has been tested during the second trial.

The course of the second trial showed the principal role of a content manager. He has to be the domain expert (historian in the particular case). No special education or skills in computer science or information technology are required. The only activity, which needs a short training, is consolidating the ontology / knowledge base if more active users participate in the annotation process. However, building on experience acquired during the trial, corresponding extension of the Apollo CH editor is being developed. This improved environment will be available by the end of July 2004 and it will significantly simplify the process of consolidating the ontology / knowledge base. The course of the second trial proved that the skills in the extent of a common computer literacy are enough even though some of the last versions of the CIPHER tools, which re-act to the trial conclusions, could not be available at the time when the trial was running.

The trials identified the following issues with the CIPHER tools;

- During the second trial, the Apollo CH underwent extensive testing, during which several bugs have been identified like omitting refresh of the Graphical User Interface. All reported bugs have been corrected during the second trial.
- In order to improve the comfort of the annotating process (and thus the efficiency of the author), several improvements of the GUI required by the users have been implemented:
- In order to ensure ontology robustness, specific integrity constraints required by Story Fountain have been investigated.
- Re-factoring functionalities have been improved, namely renaming objects (slot, class, instance, ontology, etc.) within the scope of the whole. This speeds-up significantly the process of annotating stories.

- Consolidating shared ontology/knowledge base during collaborative process of story annotating has been recognised as one of the most laborious tasks in the whole process of preparing content for Story Fountain. To simplify the process as much as possible, the XML output plug-in has been modified in so that the concepts/instances are stored in a fixed order. During the second trial, consolidating of the knowledge base had been done “manually” using generic document comparison tools and generic text editor. Based on such an experience, development of a specialised input plug-in has been started.

5 Exploring Carta Marina

Exploring Carta Marina is a cultural heritage forum about Nordic heritage built around narratives represented in the Carta Marina map of 1539 and the book the *History of the Northern People*. The Forum was initially created with the Harkko Museum in Raisio, Finland. The Harkko Museum owes its existence to the ongoing relationship with archaeologists in the region: at the city's suggestion, the University of Turku made a series of excavations during the years 1994-1997. The impressive results reinforced the city's interest "to the extent that an archaeological museum called Harkko was established there, employing one archaeologist on a permanent basis." In the second trial children in the Raisio school system also used the Forum.

The motivation behind these activities was to better understand how the process of transformation from a concept such as Culture Heritage (CH) Forum into an operational entity such as Exploring Carta Marina CH Forum operates. The trials also had the following objectives:

- Demonstrate the capacity of the *Exploring Carta Marina* Forum, its tools and methods to create and empower Communities of Interest in the Cultural Heritage sector.
- Provide a framework in which the tools, methods, and concepts created in the Helsinki site of the CIPHER project can be studied, analyzed, and further developed.
- Show the potential effects of a CH Forum on the activities and practices of a small regional museum in South-western Finland.

As part of the goals of the project, it was also important that the study, analysis, and refinement of the tools and methods would occur within the context of real life work activity in the cultural heritage sector.

5.1 Community description



The second trial of Exploring Carta Marina Forum involved a community of educators and students from primary schools in the city of Raisio and the Harkko Museum. The school children participating in the trial were aged 9 to 10 years. This group is termed a *Community of Interest*.

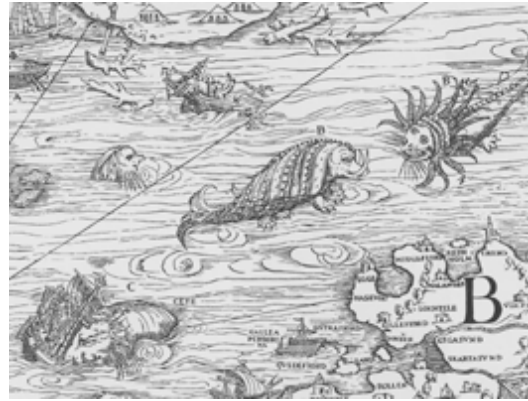
There was also an expert community that initially included one anthropologist, one archaeologist/historian, and one computer scientist. Their interests comprised Finnish language and culture, identity and multiculturalism. This second trial group was termed a *Community of Practice* or 'CoP'. The Design community at the Media Lab at University of Art and Design Helsinki in Finland can also be thought of as a CoP including design professionals from practices as diverse as art, cultural heritage and anthropology, computer science and spatial design. This group also participated in the trial.

5.2 Activities

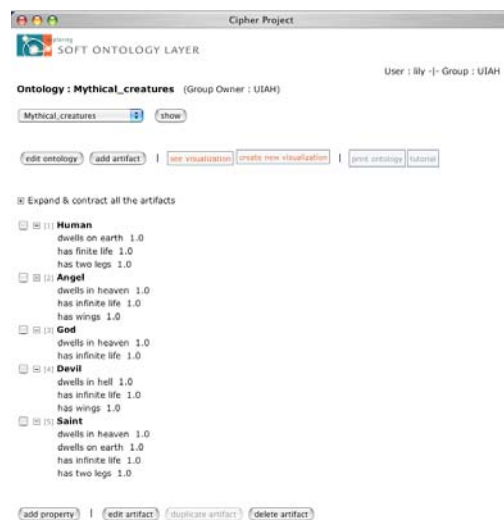
The trials with primary school pupils in Raisio tested the tools, the digital cultural heritage created for the website and the Exploring Carta Marina CH Forum. In addition to testing the portal and its tools, the aim of the cooperation

with the teachers and their pupils was to create part of the Exploring Carta Marina exhibition from the pupils' works hence giving the children a chance to exhibit their works at their local museum and to gain an understanding, that cultural heritage is not only something ancient, but that they can also be part of creating it.

The second trial phase began in September of 2003 and lasted until June of 2004.



5.3 CIPHER tools



• **Soft Ontology Layer (SOL):** This tool provides an interface that allows the user to produce soft ontologies, or non-hierarchical descriptions of artefacts created using natural language. Using the Random Vector method and the SOM (Self Organising Map) algorithm, the artefacts are displayed as similarity clusters.

Using the Raisio schools group the SOL was tested with the following objectives;

- Test the interface of the tool, its ease of use and how well it responds to the demands placed by the users.
- Test the workflow and user interaction in the context of real world activities
- Test the formula that encodes the artefacts and their properties.
- Test the SOM algorithm and whether it is implemented properly.
- Test that the results displayed in the SOM visualization are accurate.

In January –February 2004, CIPHER Helsinki entered into a trial cooperation with artist Alexander Reichstein. The objective of the trial was to build an ontology of the items created by the artist for the upcoming exhibition, *Bestiarium Construendum*.

The History of the Northern People's and the Carta Marina by Olaus Magnus has been a part of Alexander Reichstein's practice. In this particular exhibition he worked with mythical monsters and created ontologies of them in order to deconstruct them into required pieces.

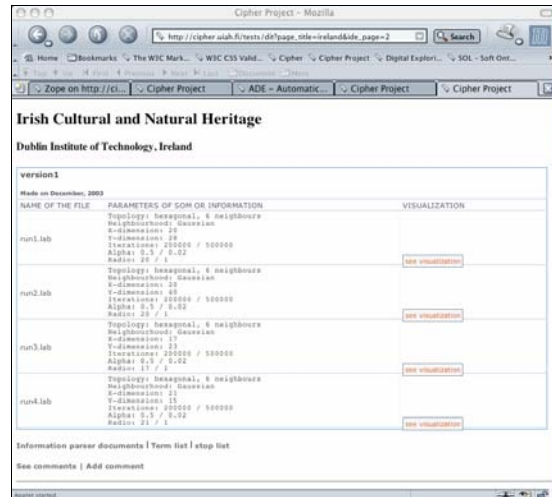
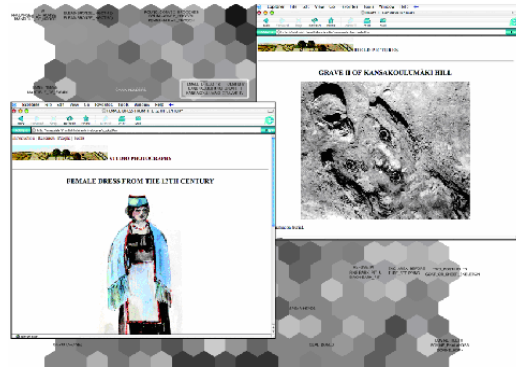
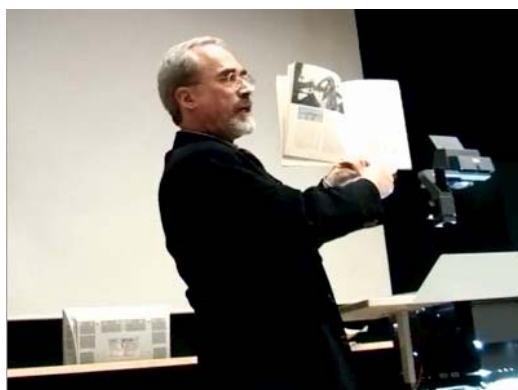
Automatic Description Engine (ADE): This tool allows large amounts of textual collections to be processed into a numerical representation whilst preserving the semantic meaning of the documents processed. Using the SOM algorithm, the collections are displayed as similarity clusters, or classes emerging from statistical correlations.

The ADE tool was tested with different types of textual data, originating in different locations, and from different types of experts. In the second trials, the system was tested with the following data:

- 113 papers presented in the **Good, Bad and Irrelevant** conference, organized by ARKI research group, Media Lab UIAH.
- The **Irish Cultural and Natural Heritage**, a large database of Irish archaeology held digitally by the Discovery Programme at the Dublin Institute of Technology, Ireland.
- **Tradition of technology** innovation in South Central England, the data is a historical record of the cryptanalysis done in Bletchley Park during the Second World War. Knowledge Media Institute The Open University United Kingdom.

The ADE tool has been designed to automatically process large amounts of textual collections and render similarity cluster maps. The objectives of the trials were to:

- Test the methods used in the tool for processing the data and creation of semantic space.
- Test for difficulties in managing the tool
- Test the implementation of the SOM algorithm
- Test whether the visualizations produced are correct and whether they meet the expectations of the content experts.



Exploring Carta Marina CH Forum: Aside from the testing of the tools already described, the trial involved the creation and testing of an organization, namely the Exploring Carta Marina CH Forum.

The trials for Exploring Carta Marina CH Forum evaluated the following factors:

- Interest in the digital cultural heritage developed
- Degree of involvement and value of assets produced through collaboration
- Impact of CH Forum on the Communities of Practice and Communities of Interest participating in the project.

5.4 Outcomes so far

- SOL tools are not at their best in a simultaneous multi-user situation. Several users may enter the same or almost the same description simultaneously, with the result that the program understands them as different descriptions. This problem was resolved through a re-design of the interface
- Since January of 2004, the CH forum website has had an average of 350 unique visitors monthly and the average number of visits has been 978 per month (with multiple visits per user).

5.5 Further information

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6 Discovery programme CH Forum Trial

The Discovery Programme is an archaeological research institution dedicated to investigating Ireland's past from earliest times and presenting the results to as wide an audience as possible. The Discovery Programme community totals fifteen people and includes archaeologists, historians, environmental archaeologists, surveyors and IT specialists.

The principle activities of the second Irish trials were the iterative usage and refinement of the CIPHER Explorer tools and the capture of structured feedback from users. The aim was better to understand how the concept of a Culture Heritage (CH) Forum as articulated in the CIPHER description of work would practically be accepted by domain experts in the field of Irish archaeology. The trial addressed several distinct user groups to examine different aspects of the tools and methodology used in the Irish CIPHER toolkit, which is called Explorer. Explorer consists of a set of software tools which together amount to a sophisticated content creation, content management and content discovery system. The trials had the following objectives:

- Demonstrate the utility of the Explorer content management tools in exploring cultural heritage narratives and quantifying the level of acceptance.
- Provide metrics for future improvement and refinement of the Explorer tools.
- Provide a tested, generalized template and architecture for the dissemination of the tools to other domains and to show the potential of CH Forums to other applications.

6.1 Community description



This group of users consisted primarily of the professional practitioners in the Discovery Programme archaeological research institute, one of the CIPHER partners. The users consisted of, pre-historians, medieval historians and archaeologists who, together with ICT staff, work in the institute. The trial within the Discovery Programme utilized the domain knowledge of its archaeological and heritage staff and their wide experience in the creation of heritage narratives. This group provided an accessible and critical test bed for some of the domain assumptions that the development team had used.

6.2 Activities

The first phase trial within the Discovery Programme consisted of ongoing usage of the Explorer tools and iterative design modification by the development team.

In this first stage of the second trials fifteen members of the Discovery Programme staff participated in a series of focus groups and formative reviews of the software development. The main points of raised during the discussions were the modification of the monument and artefact ontologies used in the first trial and how they best reflected the CH domain.

The second stage involved the testing of the DIT Explorer narrative creation tool by a group of four DP staff. The Discovery Programme staff evaluated this digital process of narrative creation whilst being guided in a series of tasks by the trial co-ordinator.

6.3 CIPHER tools

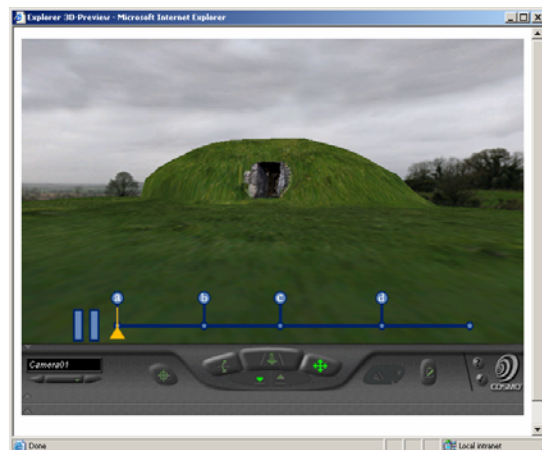
The Explorer content exploration system is used to access and explore narratives about Irish pre-history and archaeology. It employs a domain specific ontology to organise the stories into a graph of related concepts.



The Explorer content creation system helps users to create narratives and to link these narratives to underlying domain concepts. The tool also allows users to link stories into *story collections*.



The Explorer 3D presentation tool simplifies the process of creating web accessible 3D presentations and linking them to the Explorer knowledge base. Several 3D presentations were created to test this tool including the one to the right, which shows the Fourknocks passage tomb in Co. Meath, Ireland.



6.4 Outcomes so far

- The Discovery Programme staff felt that the ontology adopted from trial one was broadly suitable for the structuring of data within the CH forum. However some reservations were made and noted during the process.
- Domain experts' attitudes towards formal thesauri within CH establishments (such as the National Museum) was somewhat negative as they were seen to restrict interpretation of a monument down to its function.
- Monuments within the ontology can be accessed as single unrelated class entities as well as through the thesauri structures. It was agreed that the CRM ontology base used by the KMi CIPHER partner should be adopted to provide a more flexible approach to developing CH narratives. This process is ongoing.
- The users felt that the process of creating narratives was easy to follow, but first-time users needed more instruction.

- The creation of a long lesson was too complex and the narrative tool should allow the user to create smaller lesson narratives, which in turn would be linked to several other lessons within a themed lesson.
- Users did not automatically understand that narrative objects could readily be reused: they wanted a better explanation in the help section.

6.5 Further information

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7 Cruchain Ai Visitor Centre Group

The second user group chosen to test the Explorer tools in the second trials were visitors to “Cruchain Ai” heritage centre in Tusk, Co. Roscommon, in the west of Ireland. The centre is run as a not-for profit heritage centre. The Centre holds a small collection of heritage artefacts and hosts a multimedia exhibition explaining and interpreting the heritage landscape in the area. The Centre assists pupils and teachers in exploring the many aspects of Celtic heritage in imaginative ways. The Education Programme is adaptive and has to take into consideration visitors’ ages, abilities and interests. The programme is based on the new Irish National Curriculum, and is designed to be relevant to a broad range of topics covering subject areas such as history, geography, art, and mythology. Covering so wide an area is a big task: Irish CIPHER project helped the Centre to repurpose much of its material into digital narratives held within the Explorer system.

7.1 Community description

The community comprised the staff of the Centre itself and visitors to the centre. All visiting members are short-term members and as such will probably encounter the Explorer system for the first time. Their interests included archaeology, Irish history, Landscape archaeology, educational resources online learning.



7.2 Outcomes so far

The results from the Tusk trials include:

- The contribution and use of the system varied widely over the age range of the visitors. This suggests that a single concept of a CH forum for all is unrealistic. Different graphic interfaces and content needs to be designed for different user groups. While this concept is inherent in the design of the Explorer content management tools, the content, especially, is not generally being written or designed for younger age groups. This result has led to a reappraisal of how the Explorer forum can be promoted to younger users.
- Many visitors were encouraged by the easy access to the National Sites and Monuments Record. This is the first opportunity many had to enquiring about monuments close to their towns or counties.
- Staff within the centre displayed interest in the possibility of providing content to the Explorer website that would act as an online ‘hook’ to their own collection and encourage visitors to the centre.
- The ability to add digital media to the site was encouraging to school users. Following field trips with the supplied camera the students could add images to the site and discuss their experience. This highlighted the need to sustain communities of interest with ‘offline’ as well as ‘online’ efforts.

7.3 Further information

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