

Case Study – Geospatial Data Distribution

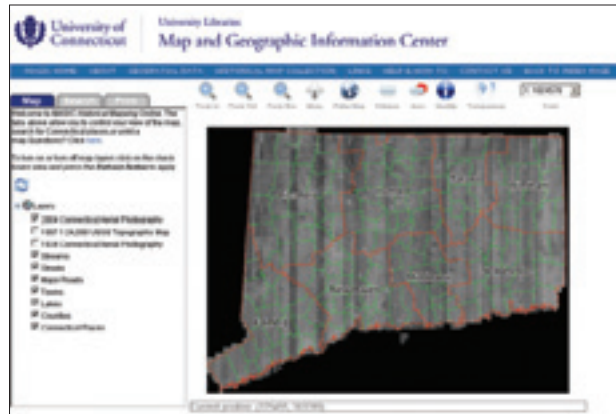
Cadcorp web-based GIS software drives the MAGIC in Connecticut

Serving the state's as well as the wider academic, research and business communities, the University of Connecticut's Map & Geographic Information Center (MAGIC), has developed its map selection and distribution facilities on Cadcorp's web-enabled GIS software, GeognoSIS.

Founded in 1881 and with some 30,000 students today, the University of Connecticut (UConn) has been ranked as the No. 1 public university in New England, USA for 10 years running. As a research-intensive university – a designation shared only by the USA's top higher education institutions – UConn has more than 70 focused research centres where faculty, graduate students and undergraduates explore everything from improving human health to enhancing public education and protecting the country's natural resources.

Naturally enough, much of the work of the university's students and academic and research staff relies on having access to information provided by the University of Connecticut Libraries. With some 3.6 million volumes; 4.3 million units of microform; 15,000 reference sources; 232,000 maps; sound and video recordings; music scores; and a growing array of electronic resources, including image databases, the collections form the largest public research collection in New England.

Housed in the Homer Babbidge Library – the main library within the University of Connecticut Libraries - is the Map and Geographic Information Center (MAGIC) – the largest public map collection in New England and a nationally acclaimed resource in the USA for geospatial information.



Key to the access provided to this collection is Cadcorp GeognoSIS web-based digital mapping/GIS software. Supplied and supported by Cadcorp's business partner for north-eastern USA, Progeos, GeognoSIS supports a new web mapping service (WMS) that enables users to view the vast range of historical, geo-referenced geospatial information available from MAGIC, via the Internet.

Geospatial information – on-line

MAGIC collects historical and modern-day maps, atlases, aerial photographs and digital geospatial data relating mainly to the state of Connecticut and to New England but also including the wider world. Public domain, copyright-free maps and related information are digitized and made available on-line to provide easy access to these resources for researchers, no matter where they live.

The United States Geological Survey (USGS) topographic map collection comprises the core of MAGIC's total holding of over 180,000 map sheets. But in addition to 7.5 minute topographic quadrangle coverage of the USA, MAGIC has general topographic coverage of many countries at scales up to 1:250,000. Large-scale topographic maps of Western Europe, Eastern Europe and Central America, as well as small- and medium-scale topographic maps of the world, are included in the collection.

In addition to the USGS topographic maps, some of which date back to 1895, MAGIC also contains historical state-wide and county maps. In addition, aerial photography, including aerial surveys from as far back as 1934 and associated geospatial data

such as zip code regions, town boundaries and water bodies etc., are among its ever-growing digital database of geospatial information. The types of geospatial information available include aquifer protection areas, bedrock, cedar swamps, drainage basins, hydrography, land use, population, housing, labour statistics and voting districts, to name but a few.

Providing easy, Internet-based access to this information, MAGIC's Cadcorp GeognoSIS-based online map viewer enables users to view historical, geo-referenced geospatial data in the context of other geo-referenced information. Users can make comparisons between different maps using special tools that allow them to compare changes over time across a variety of maps. They can also navigate easily to their location of interest and create maps of their selected data, which can be saved or printed.

In the year since MAGIC's online mapping webpage, www.econmap.com, was implemented the site has had over 20,000 visitors and hundreds of thousands of page views resulting in the creation of thousands of maps. The tools provided by Cadcorp have vastly expanded access and usability of MAGIC's growing geospatial data collection to the University and its patrons.

WMS and Google Maps

In the summer of 2009, MAGIC began the transition to GeognoSIS as the tool with which users will view, select and download all geospatial information in the future, using a simple, easy-to-follow menu selection process. This has brought a number of benefits.

MAGIC's WMS is an evolving service but in the first phase, it is serving MAGIC's state-wide data sets, while the second phase will see quadrangle data distribution added. Eventually, all of MAGIC's geospatial information will be distributed through the new service.

One of the benefits of delivering MAGIC's maps and geospatial information through the new WMS is that users no longer have to concern themselves with converting data, as they did in the past. All data-sets are projected and defined correctly in the user's GIS through the use of the WMS standard, without any intervention from the user. Neither is it necessary for users to download any type of plug-in, which has been somewhat of a restriction in the past. In fact, it will expand the number of software platforms that can read in MAGIC's library of data-sets.

The system also has the ability to enable non-GIS users to select and download maps from MAGIC. The ability it provides for maps to be delivered as KML files enables these users to view MAGIC's data-sets in programs like Google Earth.

The capability also extends to Mash-Ups. MAGIC has created dozens of Google Mash-Ups using its GeognoSIS based Web Map Service. Geo-referenced historical maps are read into the Google platform where users can search for a specific location and browse the map, greatly expanding the accessibility of the geo-referenced information.

Further developments in this area have seen the creation recently of 'How to' guides that enable users to create their own Google Mash-Ups from the growing collection of historical maps of Connecticut available on the WMS. Taking this a step further, users are also able to now embed these Google Mash-Ups in their own web sites, using MAGIC's WMS and a simple line of code.

So from an impressive and unrivalled collection of historical maps and associated geospatial information relating to Connecticut and New England, as well as historical topographic maps of the USA and other parts of the world, MAGIC has grown into an on-line treasure chest of information that is readily available to anyone with an Internet connection and – in the words of the MAGIC strap-line - a desire for digitizing the past to empower 21st century research.



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