



CADCORP SIS – SPATIAL INFORMATION SYSTEM V6.2

JEFF THURSTON REVIEWS THE LATEST CAD / GIS PRODUCT NOW AVAILABLE

At a time when GIS and CAD are being used together and web services and networking are expanding, a growing demand for products that are able to handle these formats inter-changeably and through the Web is growing. Cadcorp SIS - Spatial Information System V6.2 is the latest software release designed to meet this need. Built on standards, this product is oriented toward many of the most common spatial data sources to be found worldwide.

Software and Installation

Cadcorp SIS V6.2 is available on one DVD that installs easily and quickly. Users are asked which installation country they wish to choose before all necessary files are copied to the local computer. From the Programs menu in Windows, five individual sub-programs are available. They include Map Viewer, Map Manager, Map Editor, Map Modeller and Map Browser along with software notes and help files. The installation menu reveals that this software has a history extending 1991 – 2005. Subsequently users can expect a refined and stable program developed over time.

A hardcopy quick-start manual is available and details new features present in the program along with options. It provides all the necessary information to get things up and running immediately. Beginning with the Map Modeller, the 'About' command (see Fig. 1) also provides a glimpse into the data sources available and their formats.

Map Modeller

Most users will probably be working within the Map Modeller product. The SIS Map Modeller presents with a new Map Window, Menu, Toolbars and Workspace Window to the left.

Adding data to a Map Window is accomplished by selecting the

Map Menu item and by choosing the 'overlay' command. As an example (see Fig. 2), I chose the 'Spatial Databases' icon in the New Overlay menu which then presented a second window with options including Oracle 10g, OGC and ESRI SDE data connection types among others.

Alternatively, one might select the OGC option which leads to the Open Geospatial Consortium pane and includes several OGC data sources (see Fig.3). PostGIS is supported and several ODBC options for data import are also available. These are in addition to connections for the Digital Chart of the World, ESRI ArcIMS Servers, ER Mapper Image Web Services, the Safe Software Feature Manipulation Engine, NIMA and others. Interestingly, when ESRI ArcSDE databases are selected, an Oracle icon is presented, due to the fact that the software only connects to ArcSDE stored in Oracle. The software ships with demo data sets, although I did not have demo data sets for this review.

Importing Data and Images

Cadcorp SIS V6.2 is a serious contender when considering a product for connecting to a wide variety of formats and data types from both privately held and government data sources. This software caused me to wonder what project I could possibly be working on that it could not handle the data for.

The software imports many GIS database formats including Autodesk, ERDAS, ESRI, MapInfo, Bentley, USGS, ENVI and Intergraph raster formats among many others. Spatial data users in Great Britain are amply supported through this software with its numerous OS products and potential datasets. It is designed with OS MasterMap' to Land-Line support in mind and includes provision for various addressing types. JPEG2000, SID and ECW files are supported.

Cadcorp SIS V6.2 also introduces a Google OGC Web service (see Fig. 4) search wizard . Developed using the Google Web APIs (application programming interface), this wizard enables Cadcorp SIS desktop users to access Google's search facilities directly from within the Cadcorp SIS environment.

Data files can be configured to validate in XML using either GML 2.1.2 schema or the newer GML 3.1.1 schema in the GML Importer. I found myself connecting to many data stores on my own network where many of the files are in compressed formats. It would be nice to be able to decompress ZIP and TAR files with a right click in this program.

Data can be exported to all the usual GIS and CAD formats mentioned within this review and also includes the ability to embed drawings into the new Adobe 7 document format.

Overlay

Data added to the Map Window is termed an 'Overlay' – essentially a thematic layer. Creating new overlays can take one of three forms – the Internal Overlay which will reside in memory, Base Dataset overlay, which will reside on disk and is editable by one user only at a time, or, the Shared Dataset, also resides on disk, but is deemed a cursor dataset and can be shared among users. Keep in mind that these are Cadcorp formats, although they could be exported in other formats at a later date. Oracle Spatial and PostGIS overlays can also be edited directly, without middleware.

A significant level of support for CAD files is included in the program. This means DWG and DXF formats are supported and, each may be included as an overlay. This ability means that CAD, GIS and other spatial information can be combined either locally or via a network – into one Map Window.

Property menus for each overlay contain several commands and styles and annotation can be altered together with shapes. Again, a wide variety of shapes are used and logos may even be added. Navigation around a map window is easy and each overlay may be shown or hidden. I did find that once I deleted an overlay, the 'Undo' button could not retrieve it. That would be a welcome capability in a product that can integrate data from a wide number of sources.

Spatial Attribute Queries can be easily built (see Fig.5) and spatial

queries against selected items are included. Cadcorp SIS V6.2 excels as an integrator of spatial data types through numerous connection capabilities to spatial data stores, external and internal networks and both OGC and non-OGC compliant data sources.

As queries become new themes, they may become different types. These can include dot density, graduated values and individual types and they may include different chart types. Cadcorp SIS V6.2 can create themes and extrude and display 3D values (see Fig. 6)

CAD

Cadcorp SIS V6.2 leverages strong GIS functionality with high quality and professional CAD data creation and use capabilities. Users may choose to open files created in other CAD programs such as Bentley's MicroStation and Bentley Geographics is supported as well as Autodesk CAD related products and export back into ArcGIS. Alternatively, Cadcorp SIS V6.2 can create its own format files for use as well.

The point to note here, is that the Cadcorp SIS Modeller is extremely flexible and capable when working with CAD data, regardless of the source. Furthermore, this product can integrate CAD and GIS drawings

Fig. 1

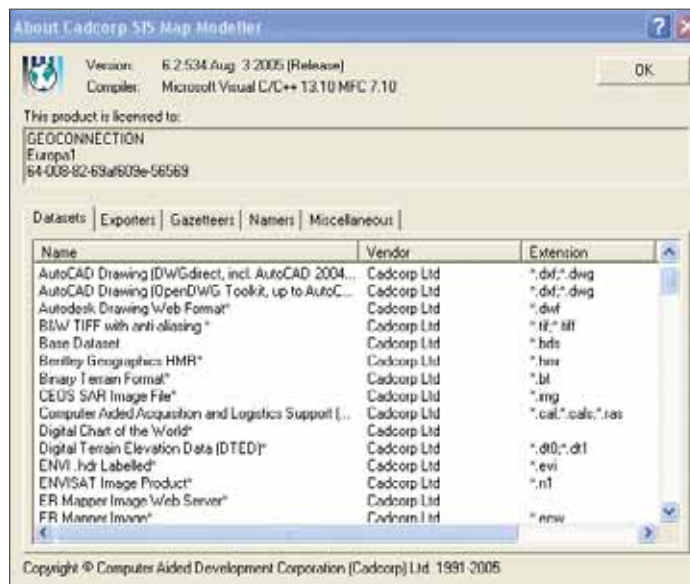


Fig. 2



Fig. 3

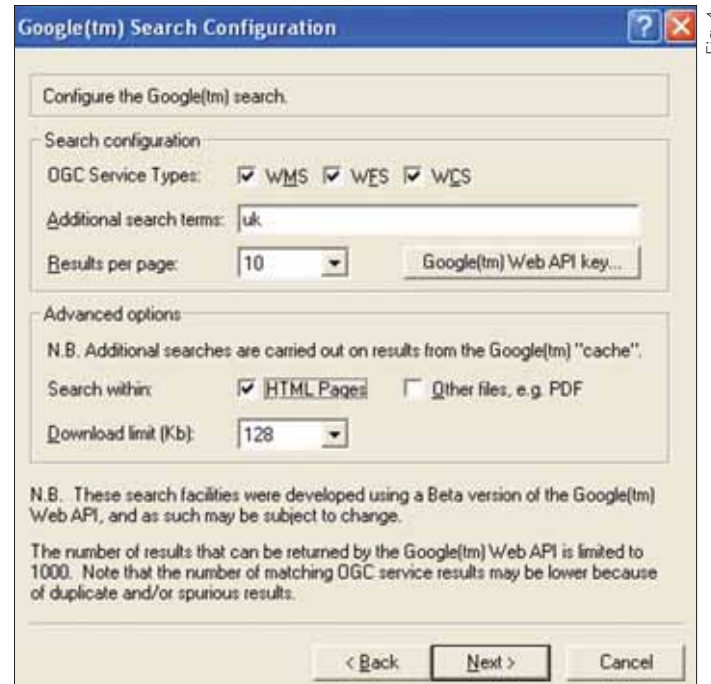


Fig. 4

Fig. 5



Fig. 6

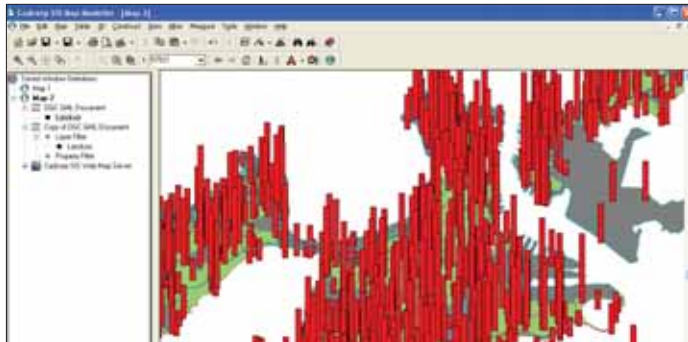


Fig. 7



together. Using the Map/Overlays/Styles commands, transparency can be set for overlays. Generalisation algorithms are included to provide clear text, for example, at pre-determined scales.

Nodes, links, chains and polygons are all easily created and topology may be inspected. Cadcorp SIS V6.2 can import data from a GPS navigator so data may be collected in real-time and displayed and stored. Using this feature, a computer COMM port must be configured. Data could then be saved in DXF, DGN or DWG formats readily.

A number of CAD commands are present under the Alter Menu which CAD users are familiar with. They include break lines, join, trim, trim and join, chamfer, fillet and facets to name a few. From a CAD perspective, this software can work with all commonly used formats. It can also create geometry and new design sheets. This software is simpler in design than most programs based solely on CAD; yet, it includes many common functions and capabilities a CAD user may need. The design of the product makes it simple to understand and use – leading to quicker adoption in the organisation.

Imaging and 3D

Added value in this product can be attributed to the 3D window display capabilities that are included directly and not as extensions. I was able to import SRTM and USGS DEM data readily and move through elevations and shift viewpoints, using the tools under the 3D Menu. Land-Form DTM – available from the British Ordnance Survey can be imported readily and triangulated irregular networks (TIN)

developed from them. Graphics in 3-D can be extruded.

Ordnance Survey's new Landplan product would work extremely well with this software since it is both CAD and GIS oriented.

I did find that OpenGL did not work as smoothly as I would have liked. A 1-degree SRTM tile, which I generally use for working with OpenGL did move as intended, but was sluggish. A change of viewpoint positions in 3D mode, particularly with larger files, can take a while to redraw. This software imports a wide number of elevation model formats and raster images can be draped upon 3-D terrains.

A wide range of remotely sensed imagery may also be imported. Using NASA MODIS imagery, I was able to import a scene over Ireland and the UK and then overlay road and city points atop the image quickly (see Fig. 7). Designs can be exported to PDF format as previously mentioned, with map symbology embedded within the PDF document as drawn in a map window.

Cadcorp SIS Map Browser

A separate free browser is also included in the program and is started from the Programs Menu in Windows. It is designed to open OGC compliant data sources and can export to them as well. For those who work with Geographic Markup Language (GML), this viewer handles them well. The browser would be useful for people who need to access data either internally or externally to the organisation. Users can pan, zoom and add annotation within the browser.

SIS Map Reader

Map Reader is a free viewer designed to open documents for display and printing that are in Published Window Definition format – native to Cadcorp.

Reviewer Positives:

Cadcorp SIS V6.2 stands as one of the best GIS/CAD integration software in the market. Not only does this product implement more OGC standards than most other software, it is clear that this software is designed to connect to data – period. That includes Microsoft SQL Server and Oracle 10g and Oracle GeoRaster, ESRI formats and ArcSDE, PostGIS and GML data types. The interface is straightforward with icons of popular vendors and products to lead the way. This product includes a 3D viewer integral to the base product – no extensions needed.

Reviewer Negatives:

I found the OpenGL in 3D mode to be sluggish. This is based upon using many other products in comparison on the same computer. As a basic display without texturing and other advanced visualisation functions, this product would fit the bill for many people. It is unclear to me how this product connects to IBM DB2 data, another popular and widely used database product.

Reviewer Summary:

Cadcorp SIS V6.2 packs a solid punch. There are few products that can match this one for OGC compatibility. Added to that is the ability to access a very broad range of data formats and products from numerous vendors. It is the only product at the moment, which includes Google connectors and provision for using a Google API Key internal to the software. Where Cadcorp SIS V6.2 lacks strong visualisation capabilities, it does the job of 3D display well and this function does not require extensions. The power of Cadcorp SIS, however, lies in the ability to get GIS data and CAD data into one environment for editing and analysis. That rare ability requires a focus on GIS and CAD domains and interoperability – for which Cadcorp SIS V6.2 is a leader.

Product: Cadcorp SIS V6.2

Manufacturer: Cadcorp

Information: www.cadcorp.com

Literature: Available on-line

Download: Online request for evaluation use and demo disk