

GeoGIS2005 – Manual - UK

# GeoGIS2005

Manual

December 2007

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## 1. GeoGIS2005 – General Description

GeoGIS2005 is a general framework for managing technical databases. The system includes a number of functions especially made for geological, geotechnical and water technical data and jobs.

GeoGIS2005 applies mainly to public institutions, consultants and contractors.

Data may be viewed in data lists, graphs, documents and maps. The user may import/export data in a number of different formats. Especially worth mentioning is the correlation between GIS-systems such as MapInfo, ArcGIS, GIS Viewer and Google Earth.

GeoGIS2005 is developed by RAMBØLL and is sold on a license basis. GeoGIS2005 is a further development of the former GeoGIS2000. It is possible to access databases used in connection with GeoGIS2000 from the GeoGIS2005 version.

In GeoGIS2005 it is possible to visualise data from the Jupiter database, which is run and maintained by GEUS. The Jupiter database now includes geological, hydro geological and chemical groundwater data from everywhere in Denmark.

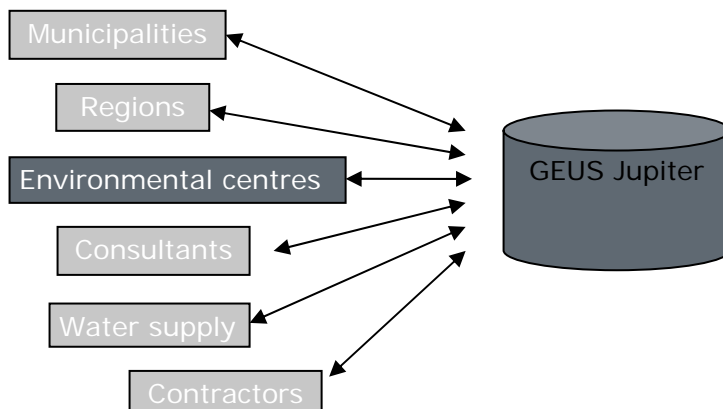


Figure 1. Jupiter with typical data contractors and partners.

## 2. User interface

Data in GeoGIS2005 are listed in database windows. The user may open several database windows at a time.

GeoGIS2005 displays data in a tree structure similar to the Windows Explorer. For each select made in the tree structure to the left, the corresponding data will show to the right. If there are sub-folders to the selected folder, data will show in a tabs structure.

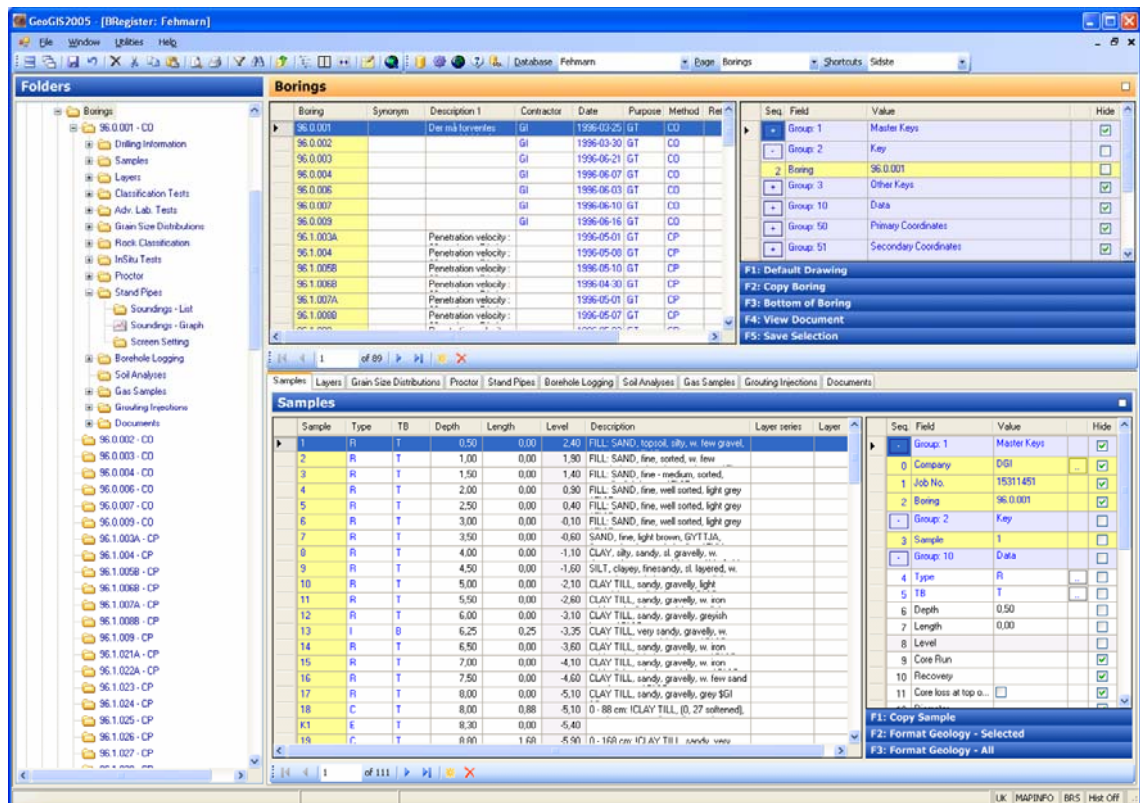


Figure 2. An example of a database window showing data from GeoGIS2005 - BRegister. To the left is the tree structure, to the right data in lists and tabs.

Data grids, Graphs and Documents are the three main forms for showing data in the database window. The documents may both be local documents or links to external pages on the Internet.

## 2.1 Windows and Viewing Data

The windows are set up in the Meta database. See section 4. At installation, GeoGIS2005 includes a ready set up meta database with the following applications:

- GeoGIS : Application for registering geotechnical data
- JupiterXL : Application for managing data from the GEUS Jupiter database
- RMS : Application for managing road survey data

In general, it is not necessary to adjust the windows. If it proves necessary, adjusting should be made by a super-user. Changes may be discarded when new versions are installed.

### 2.1.1 Datagrid

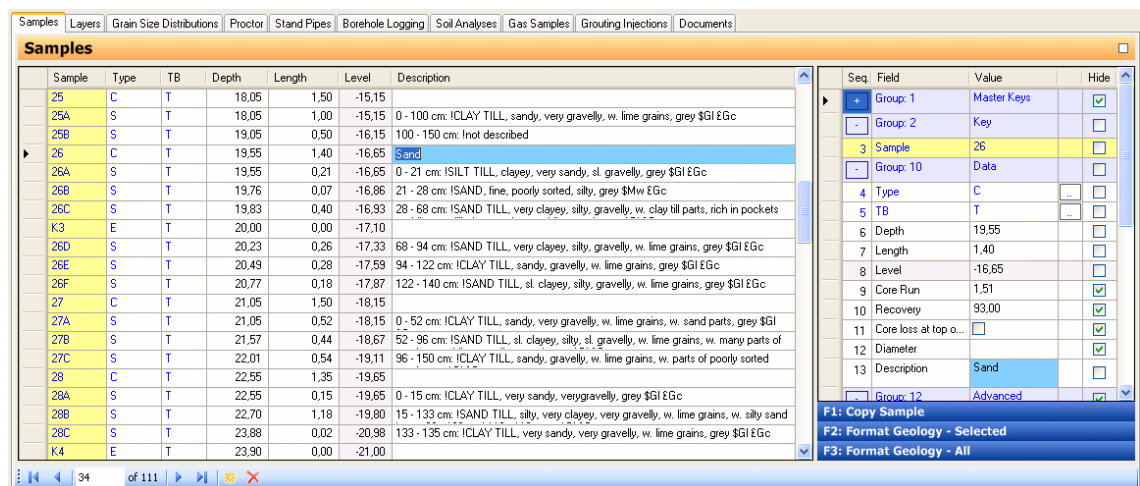


Figure 3. An example of a window with a data grid with tabs.

The panel to the left contains data in a list form (data grid). The panel to the right contains detailed data for the current row in the list to the left. The database fields to the right are divided into groups you open and close with "+" and "-". In a similar way, the user may select fields to be hidden in the list by a click in the *Hide* column.

The colours of the fields in the data grid describe the fields' function, e.g.:

- yellow fields indicate unique key fields
- fields with blue text indicate links to other data, e.g. code lists
- grey fields calculated data and other non editable fields
- turquoise fields indicate changed data

In addition to this, the different windows may have a special colour table.

At the bottom of the right panel, you find a number of buttons for calling functions attached to the current data.

By use of the Ctrl key or a shortcut menu, you can call a number of standard functions for sorting, editing and setting up the layout. Shortcut keys are found to the right in the menu:

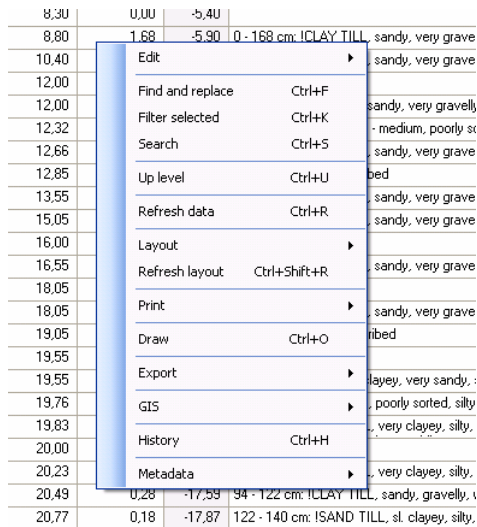


Figure 4. Shortcut keys are found to the right in the menu.

Menus and toolbars are described in detail in section 5.

Code lists are managed through combo boxes or a code list selector. The user may select which type that is used in the extended detail window:

Code lists by use of Combo boxes

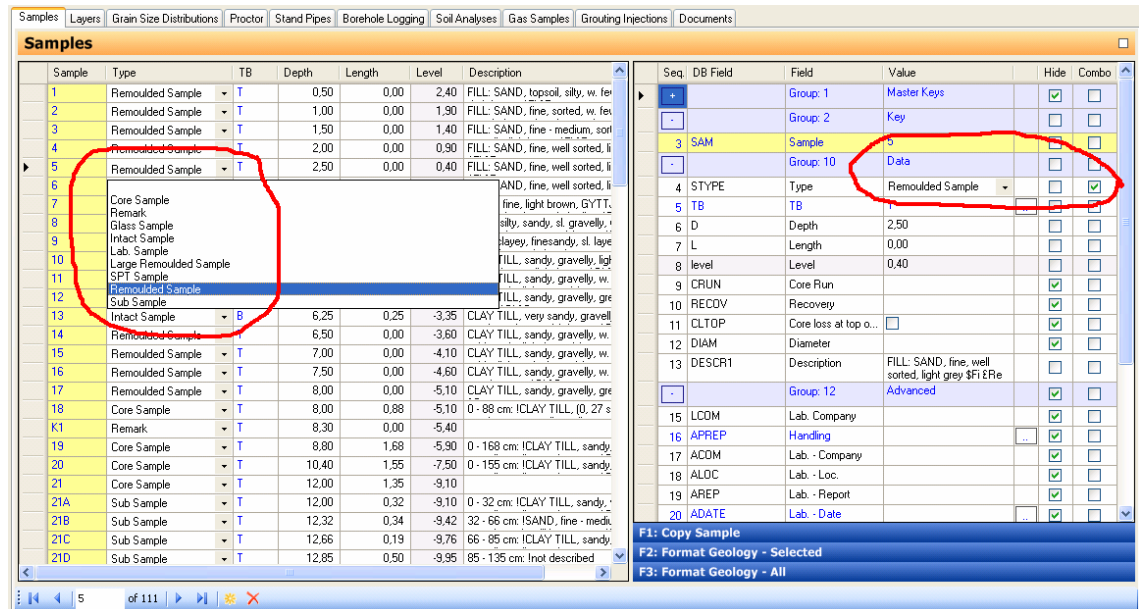


Figure 5. Code lists by use of Combo boxes.



## Code lists by use of Selector

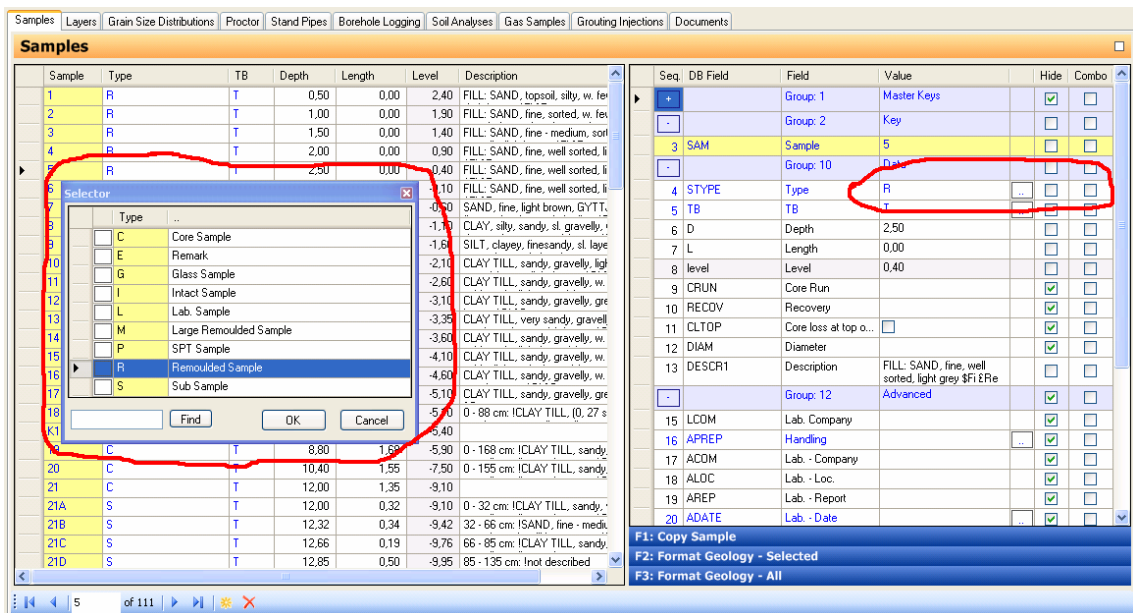


Figure 6. Code lists by use of Selector.

The Code List Selector is useful for managing long code lists and for fast editing.

You produce the extended detail window by Ctrl+Shift+Z and refresh the window appearance by Ctrl+Shift+R.

## Maximisation

You can maximise the separate windows so that the tree window and other windows, if required, are hidden by a click on the maximise button:

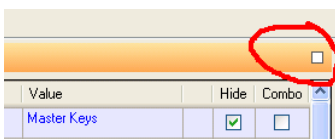


Figure 7. Button for maximising window.

## 2.1.2 Graphs

GeoGIS2005 includes a number of graphs that are used to get a quick survey of the data:

- Time series of water soundings
- Grain Size distributions

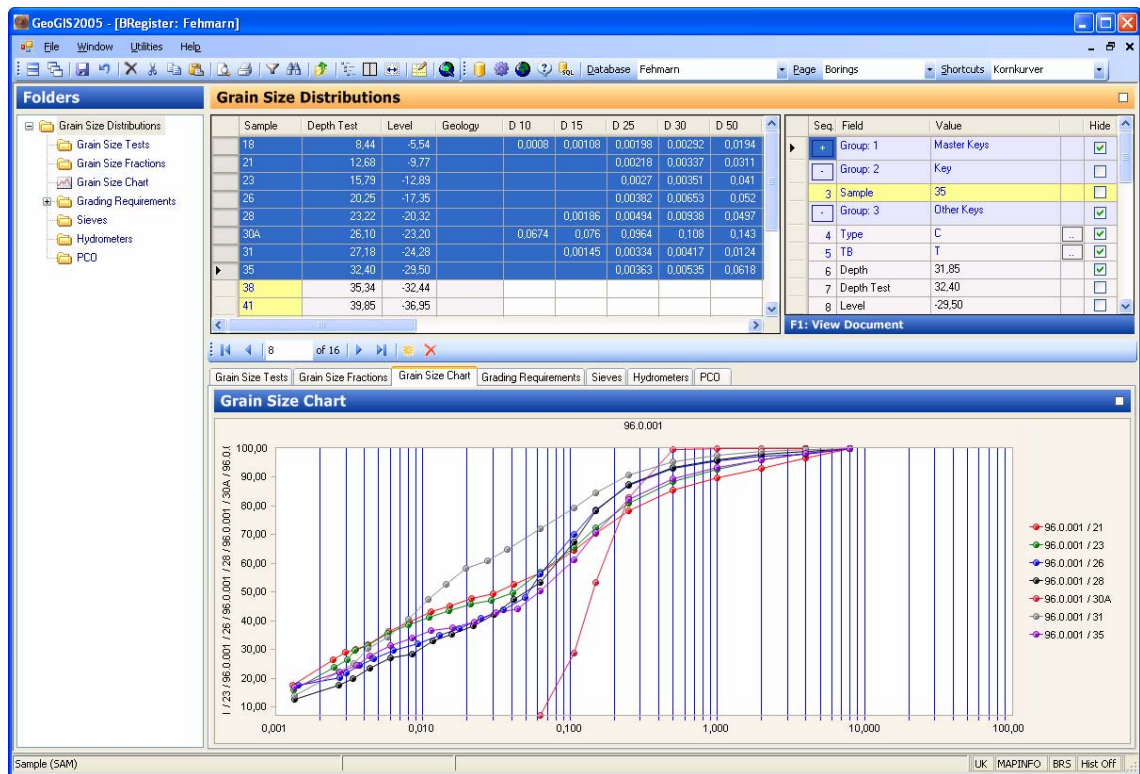


Figure 8. Grain Size distributions.

The graphs are defined in the Meta database. You may adjust the graphs by right clicking what you want to change. If you need larger control of the layout, it is easy to copy data to e.g. Excel, where there are more options for adjusting the layout.

In the detail window, the user may turn the individual graphs on and off and indicate the insertion of the axes. By right clicking on the graph and select Toolbar, you get a large number of options for editing the data view:

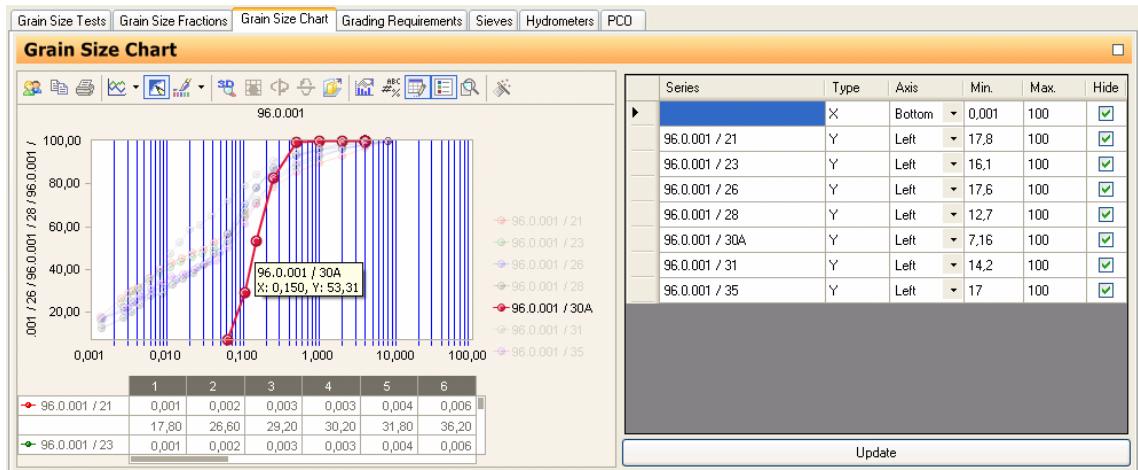


Figure 9. An example of a graph where the Toolbar is selected. Here the data are shown in a table at the bottom of the image.

### 2.1.3 Documents

External documents can be viewed in GeoGIS2005.

The documents are expected to be standard formats that can be viewed in a Browser such as html, pdf, jpg, svg, excel, word, etc.

Note, that documents do not have to be fixed files, but can also be dynamic pages that are called by the use of an URL with parameters. In this way GIS references from KMS, GEUS and others can be shown with appropriate coordinates as parameters.

Besides, GeoGIS2005 contains a number of functions for drawing borehole logs, longitudinal sections and miscellaneous geotechnical lab tests.

E.g. borehole logs from the central Jupiter database may be displayed in the form of external documents. A valid URL (external documents) or a path (local documents) identifies the documents.

Other external documents in the Jupiter database can be shown in a similar way.

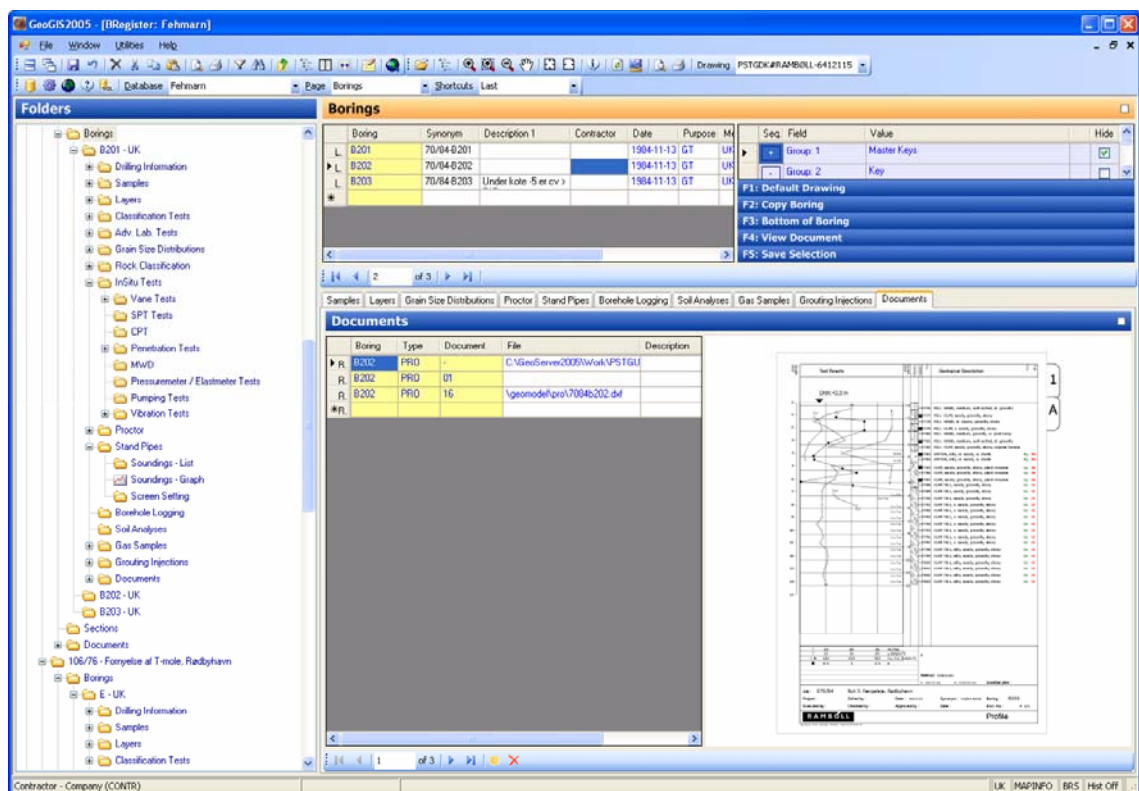


Figure 10. An example of a borehole log viewed in GeoGIS2005. The viewer can be maximised for optimal view of the external/attached documents.

## 2.2 Data

Data viewed in GeoGIS2005 may have several origins. Examples are GeoGIS databases used in connection with GeoGIS2000 and the Jupiter database at GEUS.

### Databases

GeoGIS2005 may access several databases at a time. The databases may be placed locally on the user's machine or network, in a client-server environment or hide behind a web service. The user defines the connection to the different databases in the Database administrator and is subsequently able to call the databases from the menu:

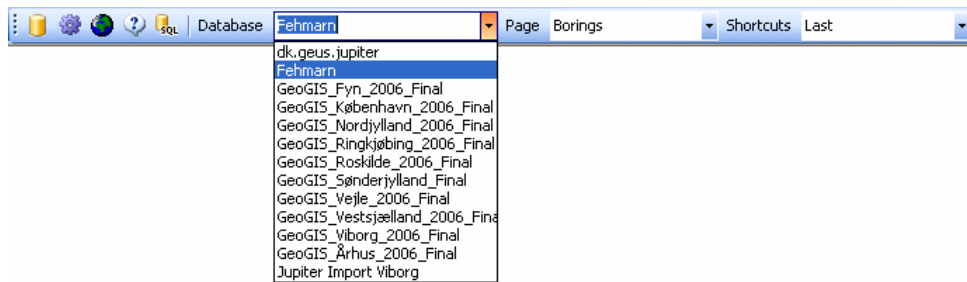


Figure 11. Fast select of attached databases.

### Pages

Access to a certain kind of database is divided into a number of "pages". The pages are called from the systems main menu:

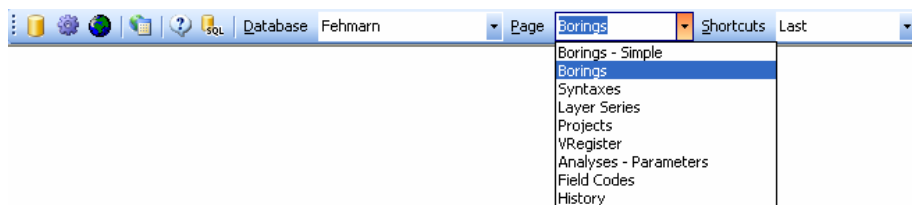


Figure 12. Selecting database pages.

Several pages belonging to the same or different databases can be viewed at the same time.

### Shortcuts

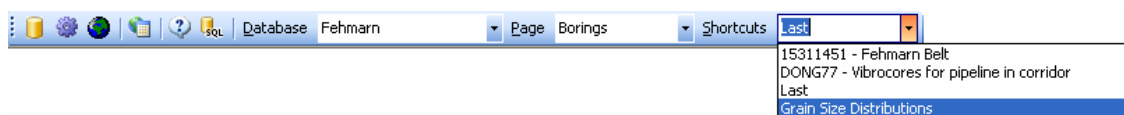


Figure 13. Selecting shortcuts.

If there is a particular item in the menu structure, which is often visited, the user may make a short cut for this item. Typical shortcuts can be:

- A particular borehole
- Newly entered samples

- a special user defined search

“Last” indicates the menu used most recently. The shortcuts may refer to different data-bases. You can enter a suitable guide text to each shortcut. You can also select a fixed shortcut as “start up page”:

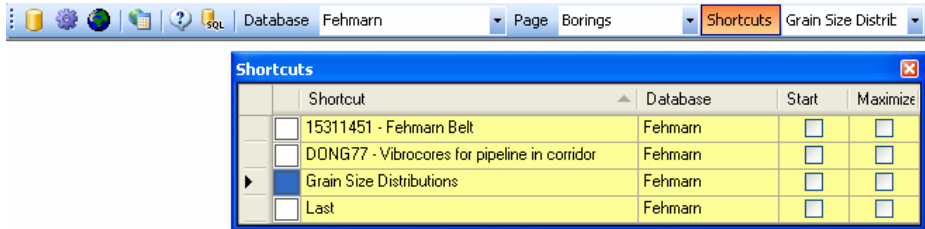


Figure 14. Editing shortcuts.

## 2.3 GIS – Interface

As standard, GeoGIS2005 has a number of functions for exporting data to desktop GIS systems directly from the windows. This is made possible by showing data together with the relevant coordinates.

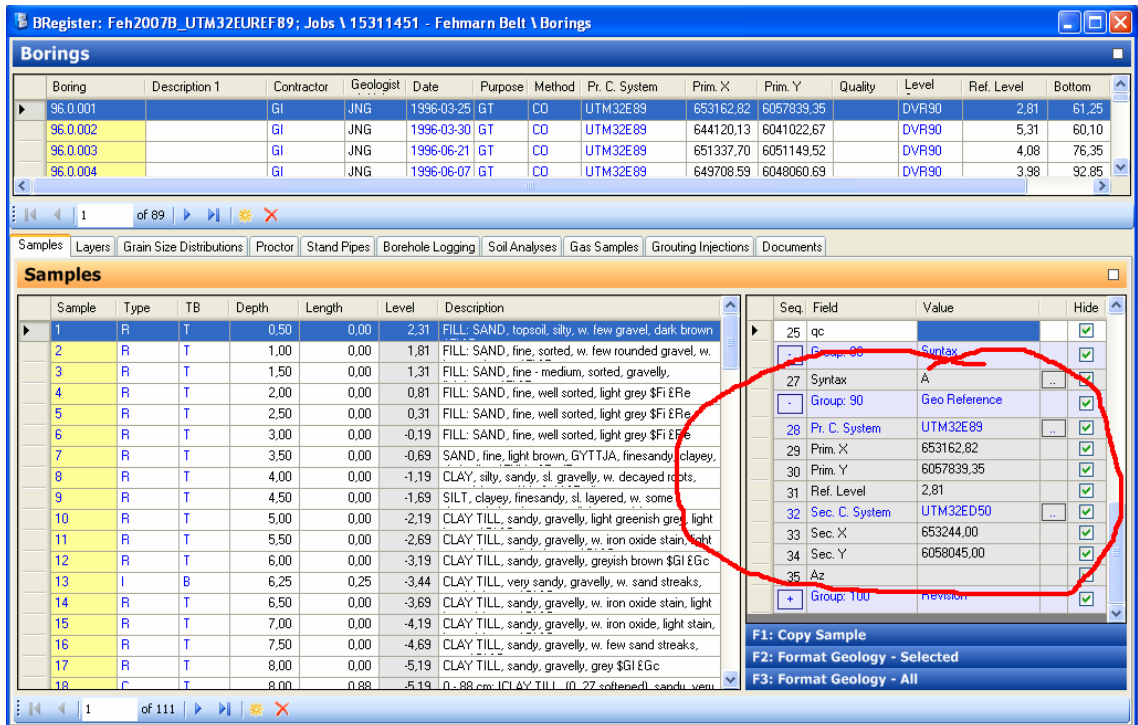


Figure 15. Here geological data are grouped together with coordinates from the borehole, so data easily can be exported to GIS.

The GIS export functions are called from the shortcut menu:

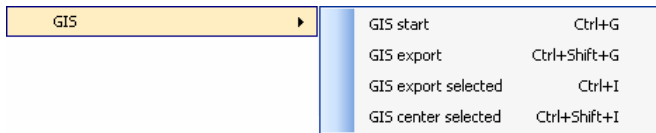


Figure 16. Direct GIS Export functions.

GIS Export functions:

- GIS start – Starts the selected GIS system. As most GIS systems have a long start-up procedure, it is more convenient to start the GIS system before you send data from GeoGIS2005.
- GIS export – All table columns are exported.
- GIS export selected - All selected table columns are exported.
- GIS center selected – The current GIS window, which has focus is centred on the coordinates in the selected rows. Markers circles are drawn, but data are not exported.

The following GIS systems / GIS formats are supported:

- ArcGIS 9.1 or later
- MapInfo 8.0 or later
- Google Earth 4.2 or later
- GISViewer
- Shape files

The easiest way to select the present GIS system is by clicking the button in the system's status bar:



Figure 17. GIS button in the status bar.

When you have exported data to GIS, you can use smaller applications in the GIS systems for:

- looking up references in GeoGIS2005
- selecting e.g. borings
- defining longitudinal sections

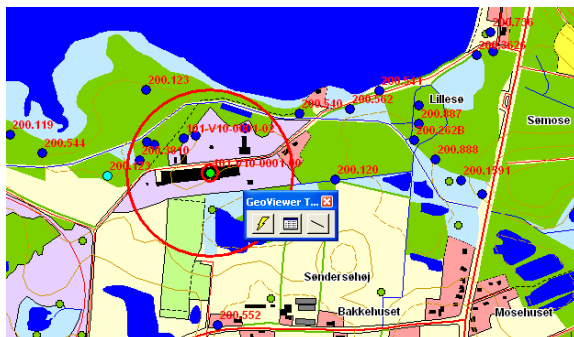


Figure 18. GeoGIS2005 toolbar in MapInfo.

You can also export data to GIS by way of the GIS module, which is used when exporting larger amounts of data, see section 3.

### 3. Utilities

GeoGIS2005 contains a number of standard tools that are used across the different database types:

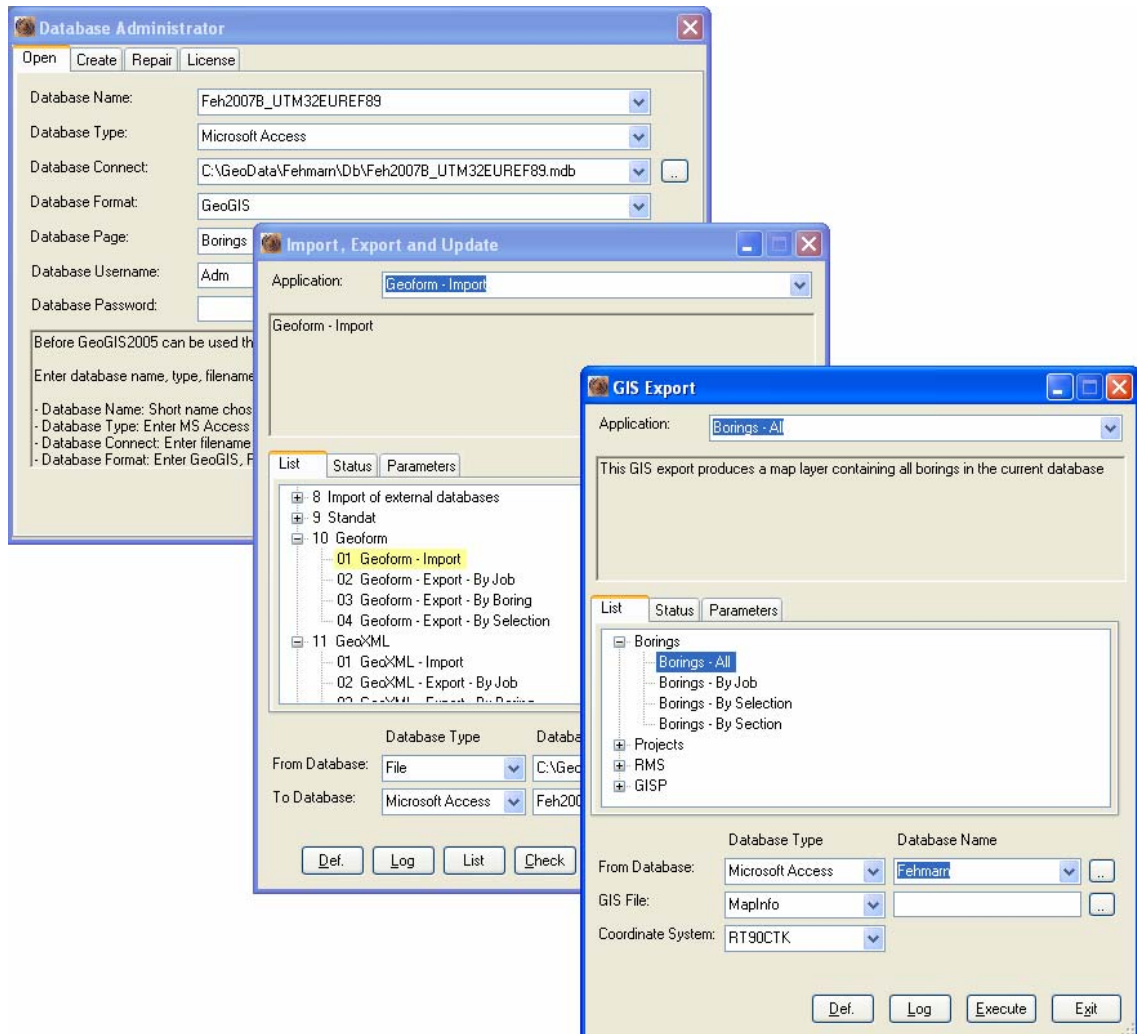


Figure 19. Various standard tools in GeoGIS2005

**The Database Administrator** is used for:

- defining database access including user name and password specification
- creating new local databases
- updating and repairing (local) database
- handling licenses

**Import, Export and Updating** is used for:

- importing and exporting data between databases and various file formats



- performing database check programs, e.g. to control that field codes are entered correctly
- performing database updating scripts

The **GIS module** is used for running large GIS export processes. The export processes can be executed in groups. The data may be exported to:

- ArcGIS 9.1 or later
- MapInfo 8.0 or later
- Google Earth 4.2 or later
- GISViewer
- Shape files

### 3.1 Database Administrator

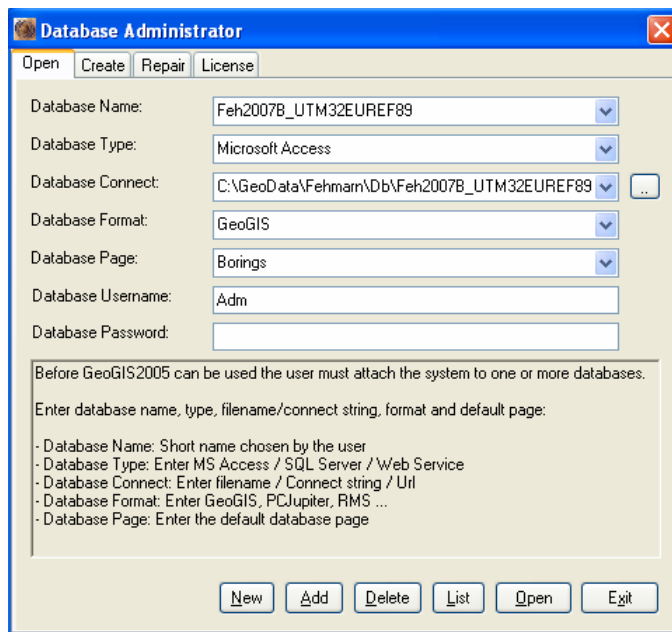


Figure 20. Database Administrator

The Database Administrator is used for:

- defining access to databases including user name and password specification.
- creating new (local) databases
- updating and repairing (local) databases
- handling license conditions

#### 3.1.1 Open database – tab

- Database Name Here the user can enter a short name for the database connection. The name is used hereafter when the user wants to see the data.
- Database Type Here the user enters the database type. The following data-

base formats are supported:

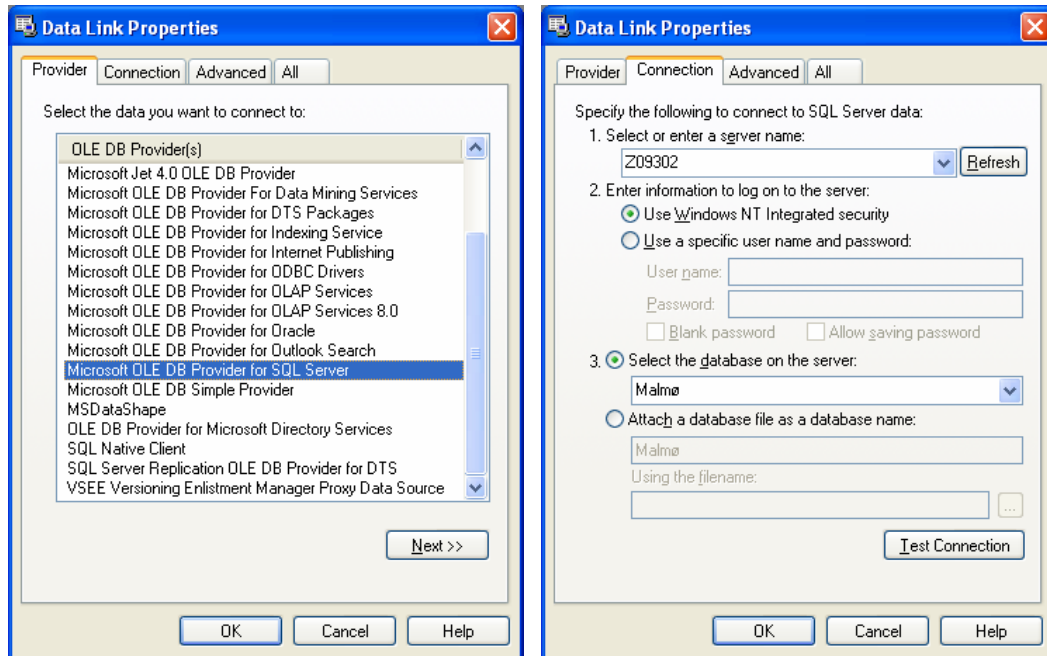
- Microsoft Access
  - SQL Server
  - Oracle
  - Webservice
  - Webservice – GEUS
- Database Connect Here the connect parameters to the database are entered. The parameters are dependent on the database type. See below.
  - Database Format Here you enter the database format. Example formats are:
    - GeoGIS
    - JupiterXL
  - Database Page Default database page for this database.
  - Database User name User name for this database. If empty, the Windows user is used.
  - Database Password Password for this database.

The connection to the database is defined once for all and saved - even if the program closes down.

The user can save the settings by using *GeoGIS2005 > Files > Save settings* and send it to another user, who can import it by using *GeoGIS2005 > Files > Import*.

If you want to connect to Microsoft Access, you click for selection of Microsoft Access data-base file (.mdb)

If you want to connect to SQLServer or Oracle you click for entering database connect properties:



1. Select OLE DB Provider

2. Select Server and Database

Figure 21. Indicating parameters for connecting to SQL Server and Oracle databases.

It is recommended that you use *Windows NT integrated security*, so the security is managed via the Windows user. By this method, the user can avoid entering user name and password in GeoGIS2005.

If you want a connection via a web service, you enter the Internet address on the server and select the database:

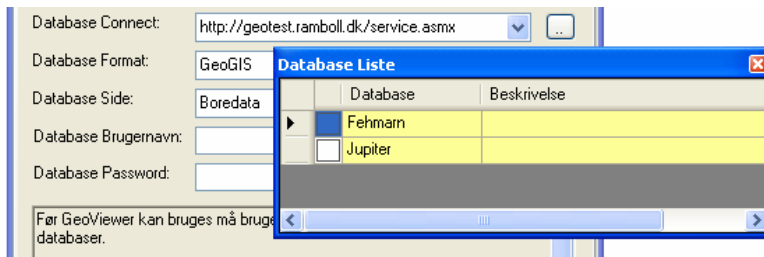


Figure 22. Selection of database in connection with web service.

Connection to Jupiter at GEUS is done via a web service with the Internet address: [www.jupiter.geus.dk](http://www.jupiter.geus.dk).

### 3.1.2 Create databases - Tab

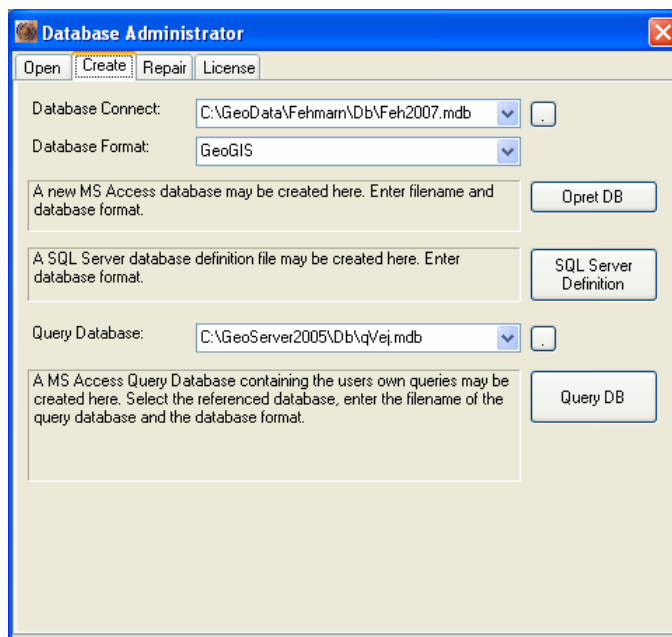



Figure 23. Database Administrator functions for creating new databases.

Here the user may:

- Create new Microsoft Access databases. Enter file name and database format for the new database.
- Print out a database definition file to use in SQL Server 2000 and SQL Server 2005. This file contains all necessary SQL expressions to create a SQL Server database e.g. by using SQL Server Enterprise Manager.

- Create a new Query database. Enter the database you want to connect to together with the file name of the Query database.

A Query database is a Microsoft Access database with tables linked to the master database. The Query database enables the user to query SQL Server and Oracle databases using Microsoft Access queries. The active Query database is the one selected in the list. The user may start access the database by pressing the icon:  in the toolbar.

### 3.1.3 Repair databases - Tab

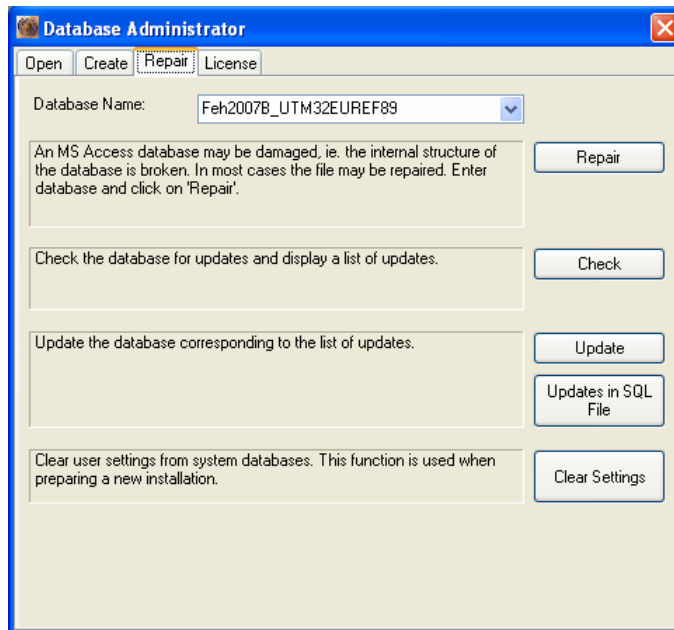


Figure 24. Database Administrator functions for repairing databases.

The user may:

- Repair Microsoft Access databases if the internal structure is damaged.
- Check a database for new tables, fields and relations.
- Update a database with new tables, fields and relations.
- Prepare a new installation.

When a user receives a new version of GeoGIS2005, new tables, fields and relations may have been added. The Check and Update functions make it possible to update existing databases corresponding to the new database formats by first listing the necessary updates and then by adding them to the selected database.

For SQL Server databases, it is possible to get the necessary update scripts printed out to a file, which afterwards may be executed in the database environment.

### 3.1.4 Licenses - Tab

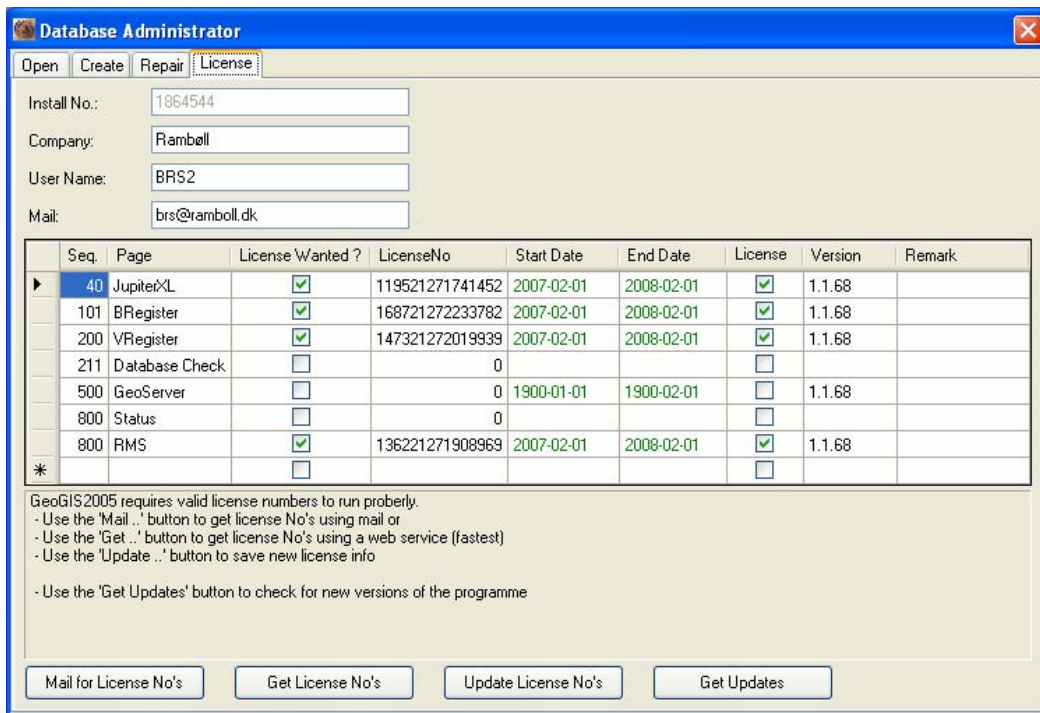


Figure 25. Database Administrator functions for maintaining license numbers.

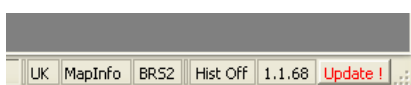
When GeoGIS2005 is installed on a PC and executed for the first time, it is supplied with an installation number. The user must get corresponding license numbers for the various modules before the program can run.

After entering Company Name, User Name and Mail Address and ticking off the required program modules, the user may retrieve the license numbers using the internet by clicking "Get License No's".

The first time the user retrieves license numbers, the possibility of using the program 1 month free of charge is offered. When the user enters into a final license agreement, Rambøll will update the license numbers, which the user can import again by clicking "Get License No's". Under special circumstances, users may get license numbers sent by mail. The users enter the new license numbers themselves and finish by "Update License No's".

The running version is checked by a click on "Get Updates". If a new version is available, the page <http://GeoGIS2005.ramboll.dk> will start. From here, new updates can be downloaded.

Each time the user starts the system and is connected to the internet, it will automatically check for new versions. If the version is outdated, the following button will show in the system's status bar:



A click on the "Update!" button gives access to the update page.

### 3.2 Import, Export and Update

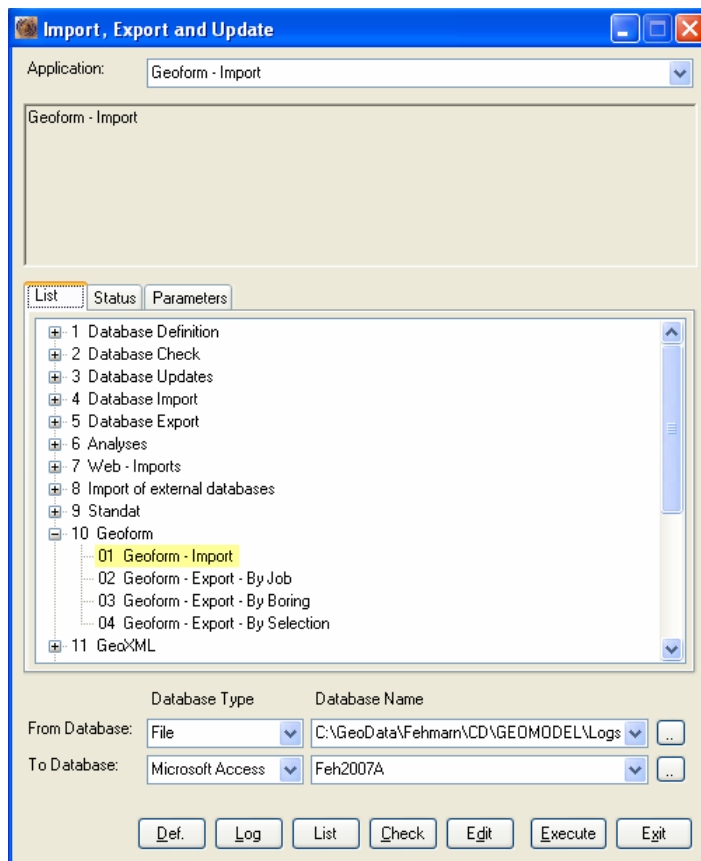


Figure 26. The Import module.

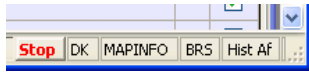
**Import, Export and Update** is used for:

- importing and exporting data between databases and various file formats
- executing database check programs, e.g. for checking that field codes are correctly specified
- executing database updating scripts

The user may specify:

- **From Database**, i.e. the database or file from which data are imported
- **To Database**, i.e. the database or file to which data are exported
- The **Parameters** tab is used to specify certain parameters in connection with the individual function
- The **Status** tab shows continuously how much the individual function has calculated

You start the program by clicking the **Execute** button and stop it by clicking the **Stop** button in the Status bar:



### 3.2.1 Geoform and GeoXML

**Import, Export and Update** has a special function to read and write Geoform / GeoXML files used for exchange of especially geological and geotechnical information:

#### Geoform Files

```
##,
#COM %'DSB%'DSB%'Møntergade,
(R&H kortnummer 1239),"%1%False%
#JOB %'DSB%'012/90%'Nyt oplæggeleje, Rødbyhavn%%a%UTM32ED50%19951004 120000%19951004 120000%%B%'UK%'dev%'20040329
111034%6%True%
#BOR %'DSB%'012/90%'B501%'12/90-B501%'19900502
120000%'UTM32ED50%'651866%6058851%'DNN%'2.74%'0%17.6%'GT%'UK%'dev%'20040329 051729%126%
#LAY %'DSB%'012/90%'B501%'0%'7.25%'TC%'A%'LG/PG%'482%
#LAY %'DSB%'012/90%'B501%'0%'M%'481%
#LAY %'DSB%'012/90%'B501%'0.6%'M%'483%
#LAY %'DSB%'012/90%'B501%'1.2%'M%'484%
#LAY %'DSB%'012/90%'B501%'2.3%'M%'485%
#LAY %'DSB%'012/90%'B501%'4.4%'M%'486%
#LAY %'DSB%'012/90%'B501%'6.3%'M%'487%
#LAY %'DSB%'012/90%'B501%'7.25%'M%'GC%'488%
#SAM %'DSB%'012/90%'B501%'2967%'R%'T%'0.5%'FILL: SAND, sl. clayey, gravelly, w. mull%'False%'0%0.6%
#SAM %'DSB%'012/90%'B501%'2968%'R%'T%'1%'FILL: SAND, medium, sl. gravelly, w. gyttja lumps%'False%'0.6%1.2%
.
.
.
#EOF
```

Figure 27. Example of a Geoform file.

The Geoform files list the data in tables and in rows. The data fields are identified by their sequence in the tables.

#### GeoXML Files

```
<?xml version="1.0" encoding="iso-8859-1"?>
<GeoXML VERSION="1.0.0" DATE="20061105">
<COM COM="DSB" NAME="DSB" ADDRESS="M&#248;ntergade, (R&#38;H kortnummer 1239)," SYM="1" Active="False" />
<JOB COM="DSB" JOB="012/90" TITLE="Nyt opl&#230;ggeleje, R&#248;dbyhavn" DESCR3="a" CSYS1="UTM32ED50" DSTART="19951004 120000"
DCOMPL="19951004 120000" SYNTAX="B" SETUP="UK" RINI="dev" REV="20040329 111034" MSLINK="6" lck="True" />
<BOR COM="DSB" JOB="012/90" BOR="B501" BSYNO="12/90-B501" BDATE="19900502 120000" CSYS1="UTM32ED50" X1="651866" Y1="6058851" LSYS="DNN"
Z1="2.74" TOP="0" BOTTOM="17.6" PURPOSE="GT" mthd="UK" PHASE="0" RINI="dev" REV="20040329 051729" MSLINK="126" />
<LAY COM="DSB" JOB="012/90" BOR="B501" D1="0" D2="7.25" INTERP="TC" SERIES="A" LAYER="LG/PG" MSLINK="482" />
<LAY COM="DSB" JOB="012/90" BOR="B501" D1="0.6" INTERP="M" MSLINK="481" />
<LAY COM="DSB" JOB="012/90" BOR="B501" D1="1.2" INTERP="M" MSLINK="483" />
<LAY COM="DSB" JOB="012/90" BOR="B501" D1="2.3" INTERP="M" MSLINK="484" />
<LAY COM="DSB" JOB="012/90" BOR="B501" D1="4.4" INTERP="M" MSLINK="485" />
<LAY COM="DSB" JOB="012/90" BOR="B501" D1="6.3" INTERP="M" MSLINK="486" />
<LAY COM="DSB" JOB="012/90" BOR="B501" D1="7.25" INTERP="TC" SERIES="A" LAYER="GC" MSLINK="487" />
<SAM COM="DSB" JOB="012/90" BOR="B501" SAM="2967" STYPE="R" TB="T" D="0.5" DESCR1="FILL: SAND, sl. clayey, gravelly, w. mull" CLTOP="False"
D1="0" D2="0.6" />
<SAM COM="DSB" JOB="012/90" BOR="B501" SAM="2968" STYPE="R" TB="T" D="1" DESCR1="FILL: SAND, medium, sl. gravelly, w. gyttja lumps"
CLTOP="False" D1="0.6" D2="1.2" />
.
.
.
</GeoXML>
```

Figure 28. Example of a GeoXML file.

GeoXML meet the same demands as Geoform files, but are based on a simple XML format. The advantage of using GeoXML is that the database fields are specified explicitly. This is more safe than using the field sequence as in the Geoform files.

### 3.2.2 Definitions

The different functions in **Import, Export and Update** are defined in the Import definition database. It can be called from the system menu:

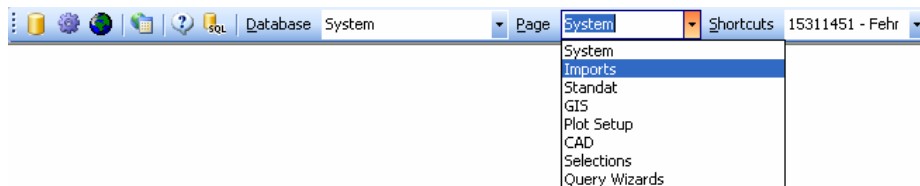


Figure 29. Calling the Import definition database.

In the definition database, the user may e.g. edit the different SQL expressions:

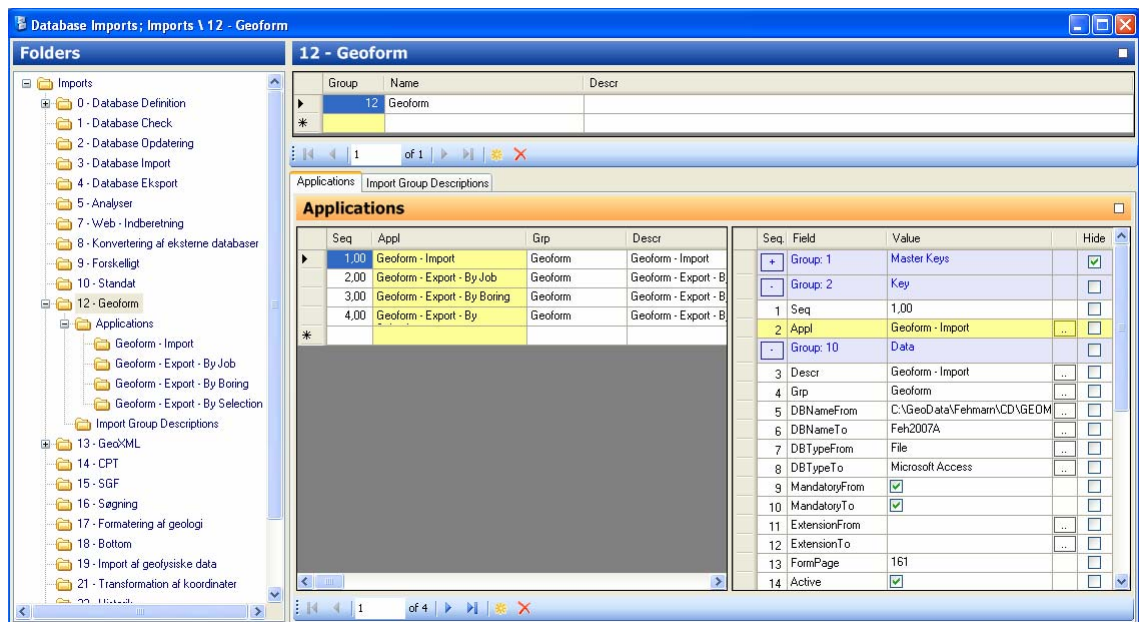


Figure 30. The Import definition database.



### 3.3 GIS Export

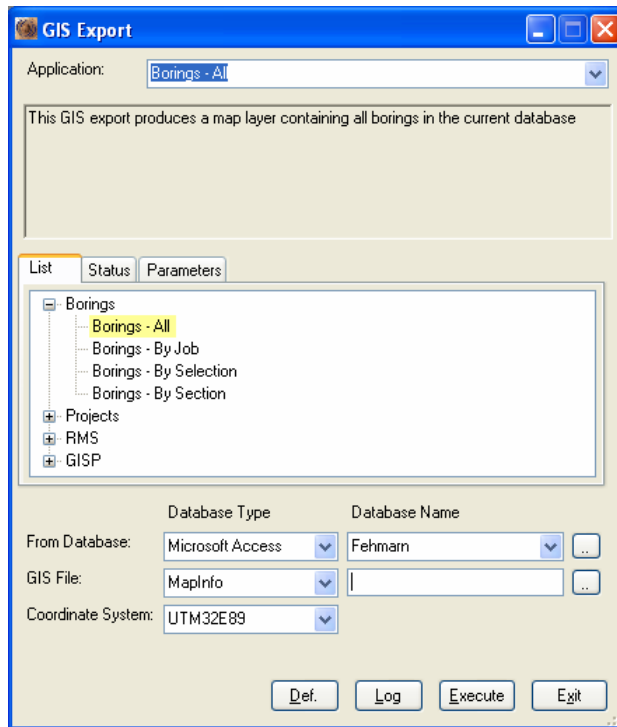


Figure 31. GIS Export.

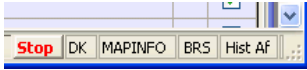
The **GIS module** is used for running large GIS export jobs. The export jobs may be executed in groups. The exported data may be imported to:

- ArcGIS 9.1 or later
- MapInfo 8.0 or later
- Google Earth 4.2 or later
- GISViewer
- Shape files

The user must specify:

- **From Database**, i.e. the database or file from which data are imported
- **GIS File**, i.e. the path to the files to which data are exported
- **Coordinate system**
- The **Parameters** tab is used to specify special parameters in connection with the individual function
- The **Status** tab shows continuously how much the individual function has calculated

You start the program by clicking the **Execute** button and stop it by clicking the **Stop** button in the Status bar:



If you select export to MapInfo or ArcGIS the files will open in a new map window. All layers will be in the same window. If you select export to shapefiles you can open the file separately in e.g. ArcGIS.

Note that you can also export to GIS directly from data grids using the shortcut menu.

### 3.3.1 Definitions

The different functions in the **GIS module** are defined in the GIS definition database, which can be called from the systems menu:

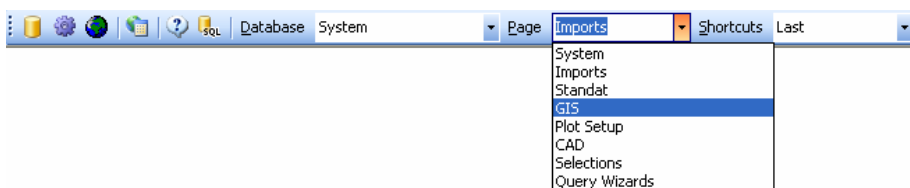


Figure 32. Calling the GIS definition database.

## 3.4 Search

### 3.4.1 Standard search function

Standard search based on a data grid window is quickly made by using the standard search function:

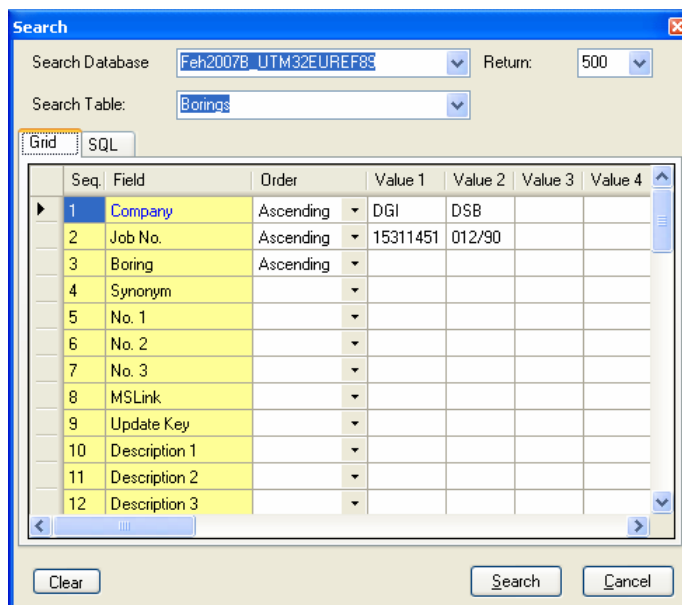


Figure 33. The standard search function that can be called from all windows. Grey fields are calculated fields.

The user may enter up to 10 alternative criteria's. The **Return** field is used to limit the number of result rows. Normally you should not look up more than about 10000 rows. This limitation is especially important in connection with the use of webservices.

The SQL tab contains the criteria in SQL form:

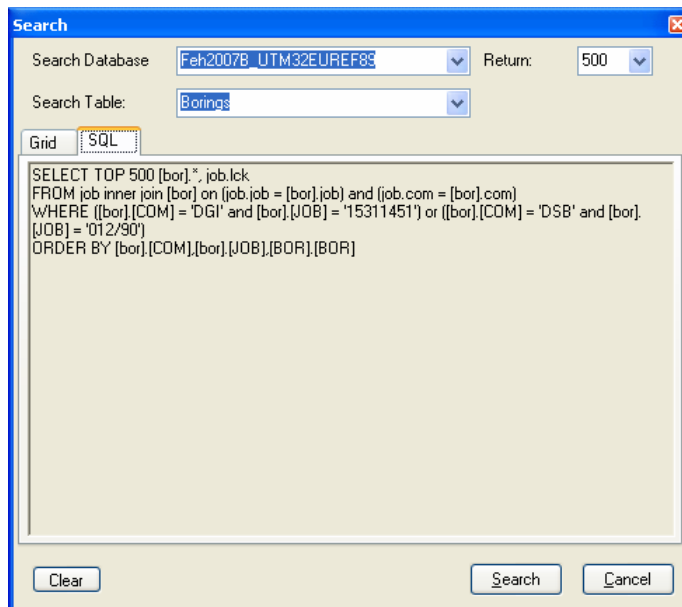


Figure 34. The standard search function – SQL window

### 3.5 Plotting Drawings

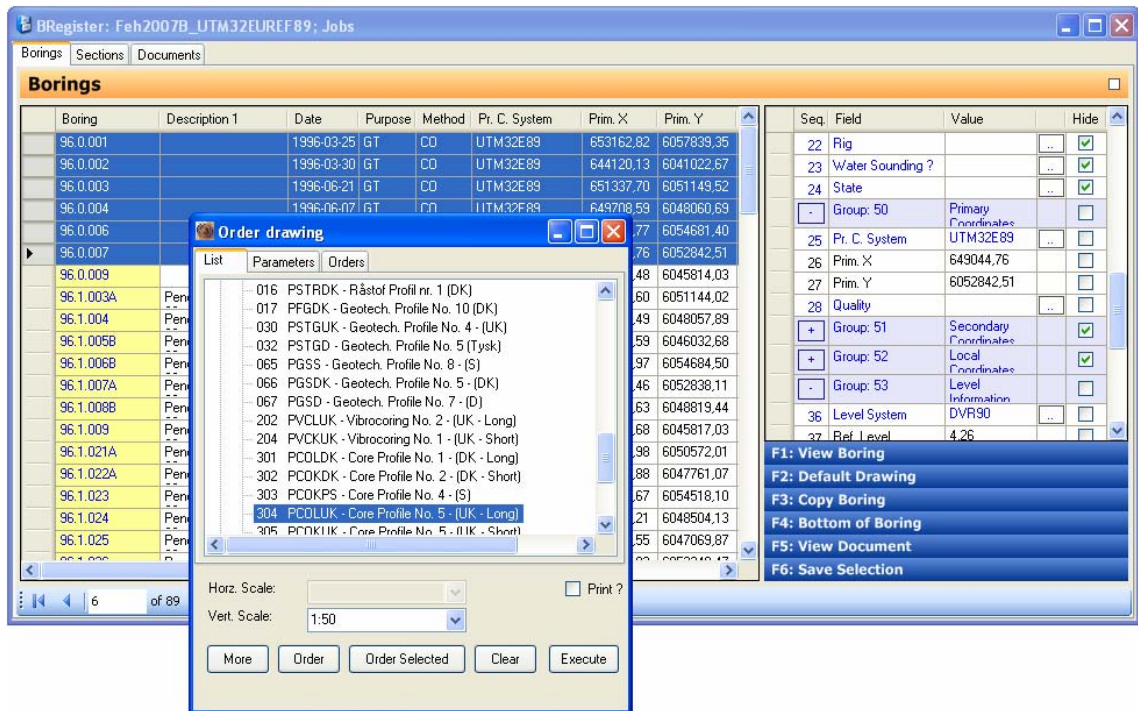


Figure 35. Plotting borehole logs.

The user may plot drawings of borehole logs, longitudinal sections, laboratory enclosures etc. by calling the drawing function. Here you can select the required drawing type and order one or more drawings:

- **More** is used to change the set up of the individual drawing.
- **Order** is used to order a single drawing for plotting – double click in the list for fast plotting of a single drawing.
- **Order Selection** is used to order drawings of e.g. a number of selected boreholes.
- **Clear** is used to delete earlier orders.
- **Execute** is used to create the ordered drawings.
- **Exit** closes the window.

The plotting scales (**Horz. Scala** and **Vert. Scala**) may be changed for each drawing type and saved to the next time the window is used. **Print?** is used to indicate whether the drawing should be sent to the printer immediately.

The user may enter special parameters in the **Parameters** tab and see the ordered drawings on the list in the **Order** tab.

The user may select *Standard Drawings* by using the shortcut menu in the drawing list. The standard drawing is highlighted with blue:

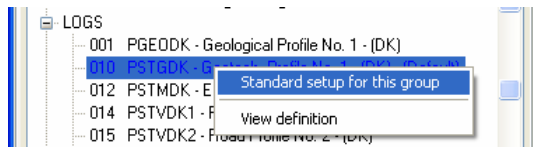


Figure 40. Selection of *Standard Drawing*.

*Standard Drawing* may be used for fast plotting in the relevant windows:

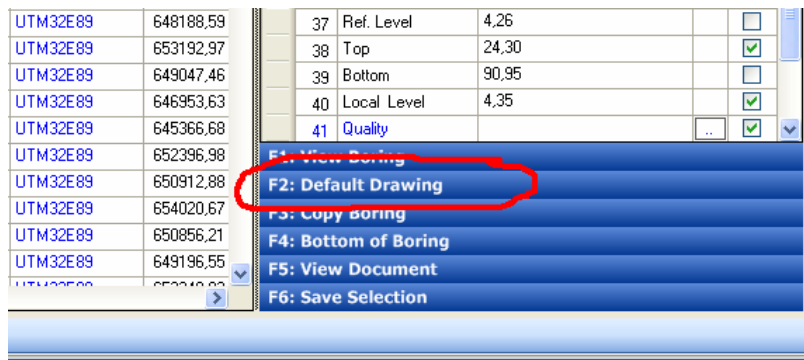


Figure 41. Button for execution of *Standard Drawing*.

The user may select existing drawings from the drawing list in the tool bar:



The drawings are shown as standard in the built-in drawing program:

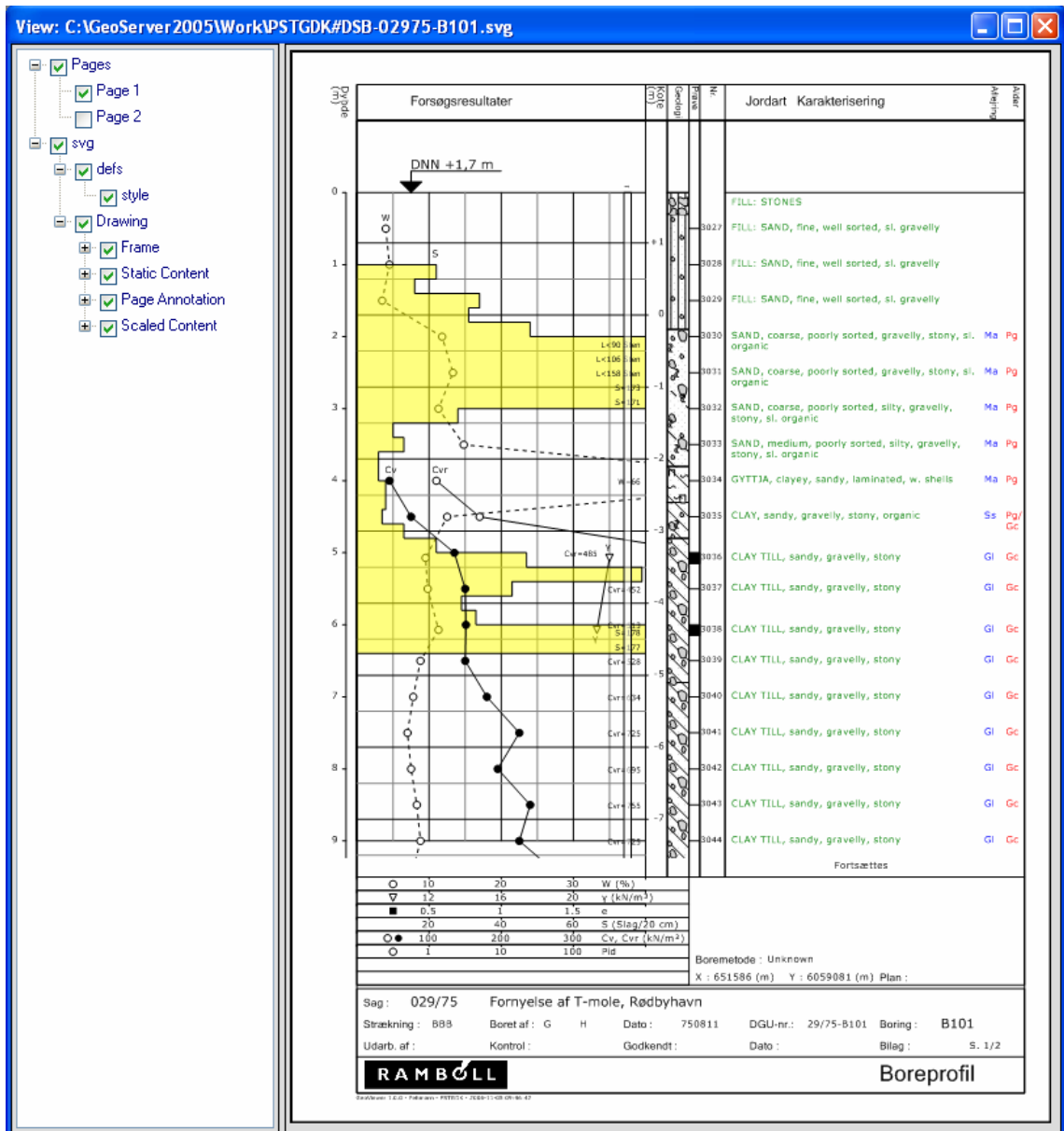


Figure 42. Example of a borehole log.

The user may manipulate the drawings by use of the corresponding toolbars and shortcut menus:

#### Drawing Toolbar



## Drawing Shortcut Menu

Tree View	Ctrl+Shift+T
First Page	
Next Page	
Previous Page	
Last Page	
Zoom In	Ctrl+Shift+I
Zoom Area	
Zoom Out	Ctrl+Shift+O
Pan	
Fit	Ctrl+Shift+F
Fit to Width	Ctrl+Shift+W
Fit to Height	Ctrl+Shift+H
Info	
Refresh from File	
Refresh from Database	Ctrl+Shift+R
Copy	
All Black ?	
Print Preview	
Print	Ctrl+Shift+P
Dxf	
Windows Metafile (EMF)	
Bitmap (PNG)	
Edit Setup	Ctrl+Shift+S
Edit Defs	
Edit File	Ctrl+Shift+E
Clear List	
Clear Cashe	
Browser	



Open drawing file

This function allows you to select an existing drawing file.



Shift tree window

This function turns the view of the tree window on and off.

First page  
Next page  
Previous page  
Last page

These functions are used for navigating between the different pages.



Zoom In

This function is used for zooming in on the drawing by clicking a new centre.



Zoom Area

This function is used for zooming in on the drawing by selecting a new drawing section.



Zoom Out

This function is used for zooming out in the drawing by clicking a new centre.



Pan drawing

This function is used to move the current drawing section. Click and drag.



Adjust

This function adjusts the scale so the entire drawing is visible inside the drawing window in question.



Adjust width

This function adjusts the scale in such way, that the entire width of the drawing is shown within the drawing window in question.

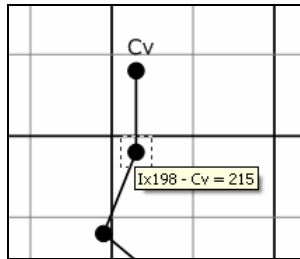
Adjust height

This function adjusts the scale so the entire height of the drawing is visible inside the drawing window in question.



Info

The info function gives information about the individual drawing items, when you run the mouse over them:



A click on the drawing items causes a jump to the relevant input windows.

Refresh drawing from file

This function redraws the drawing from the drawing file without creating a new drawing from the database again.



Refresh drawing from database

This function causes an update of the drawing from the database. This is useful if the user has made corrections to the corresponding data.

Copy

This function copies the drawing to the clipboard.

Black and white?

If this parameter is turned on, the drawing will be optimised to black and white printing.



Print preview

Show a preview of the print in the window.



Print

Send the preview of the print to a printer.



Dxf

This function causes the drawing to be printed as a Dxf file, which can be imported to various CAD systems e.g. AutoCAD.

Windows Metafile

This function is used to print the drawing in Windows Metafile format, which can be read by many drawing tools.

Bitmap (PNG)

This function is used to print out the drawing in PNG format.

Edit Setup

This function causes a call of the database that describes layout and database extract for the drawing.

Edit Defs

This function makes it possible to edit the symbol definition files connected to the drawing.



Edit drawing file	This function makes it possible to text edit of the drawing file.
Clear drawing list	This function deletes the system's list of old drawings.
Clear buffer	This function deletes imported drawing settings from the memory so it is possible to import the updated settings again.
Browser	Drawings are printed in SVG format, which can be viewed in various browsers. The present version of the file format requires that Adobe's SVG plugin is used. This plugin can be downloaded from <a href="http://www.adobe.com/svg/viewer/install/main.html">http://www.adobe.com/svg/viewer/install/main.html</a> .

### Tree window

The tree window in the drawing tool can be used for navigating between the pages and for indicating whether the different drawing items should be visible or not:

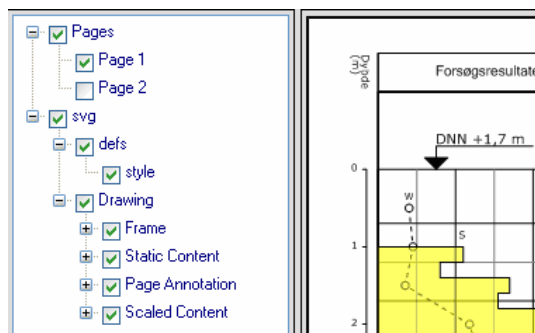


Figure 43. The drawing program's tree window.

- **Pages** contain the possibility for selecting the active page.
- **SVG** contains the drawing in a hierarchical structure.
- **Defs** indicates the standard symbols.
- **Frame** describes the drawing frame.
- **Static Content** describes drawing items that recurs from page to page.
- **Page Annotation** indicates page numbering etc.
- **Scaled Content** contains scaled drawing items for example data that varies with the depth in connection with drilling profiles.

## Adjustment of logo

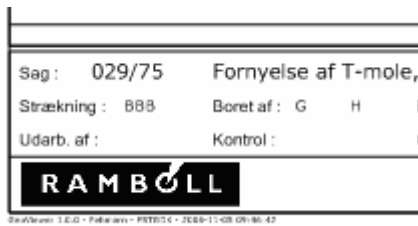


Figure 44. Logo Example.

Logos on drawings are most easily given as bitmap files in e.g. png format. The files are placed as standard in the folder: ..\Images under GeoGIS2005 in the main folder.

In the background table definition files the placing and scaling of the bitmap files are given as in the following piece of the file ..\Lib\hstgdk.svg:

```
.  
.   
<text x="109.0" y="-12.0">Dato :</text>  
<text x="145.0" y="-12.0">Bilag :</text>  
</g>  
<image x="2" y="-9" width="40" height="8" xlink:href="../../images/logo.png">  
</image>  
</g>  
.   
.
```

## Adjustment of drawings

The different drawings are defined in the database: ..\Access\G05Draw.mdb. The user can edit the different settings by calling the page:

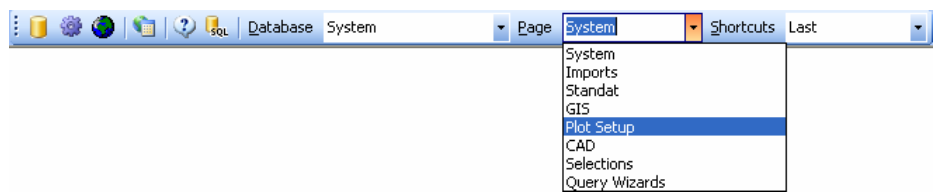


Figure 45. Call of page for setting of drawings.

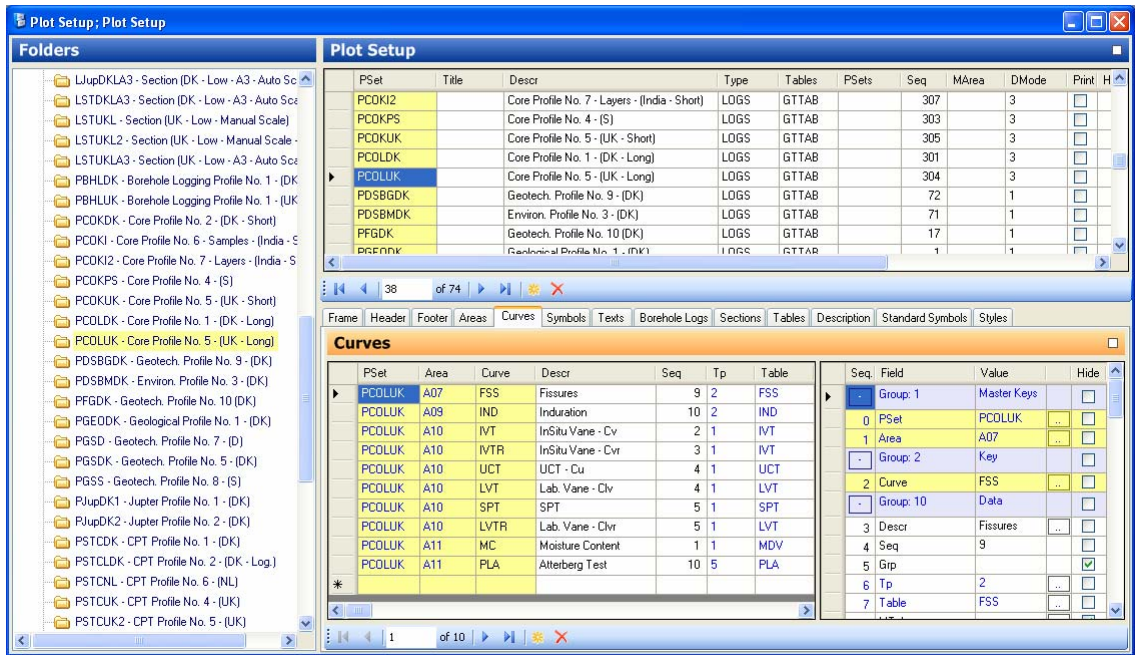


Figure 46. Database page for setting up drawings.

### 3.6 History

The history module in GeoGIS2005 is used to register the updates different users perform on a SQL Server database. That is, each time a user inserts, updates or deletes a database row the following is registered:

- The user, that performed the update
- When the update was performed
- Which tables, rows and fields are updated
- What the field values were before and after the update

The updates are tied together in transactions, for example:

- All rows imported from a data file
- All rows that will be deleted when the user deletes a project or a drilling
- All rows that will be updated if the user rename a project

Each time a user logs on to the system a new transaction starts.

The user may subsequently Undo a whole transaction or a single update.

#### **History of a single database row**

If you want information about the history of a given database row, you mark the row by clicking the row selector in the left part of the window. Then you click the History icon in the GeoGIS2005 icon toolbar:

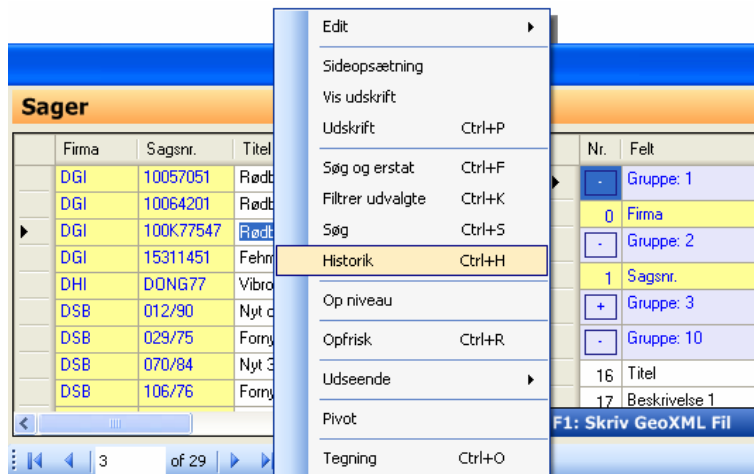


Figure 48. The menu for viewing history of a single row.

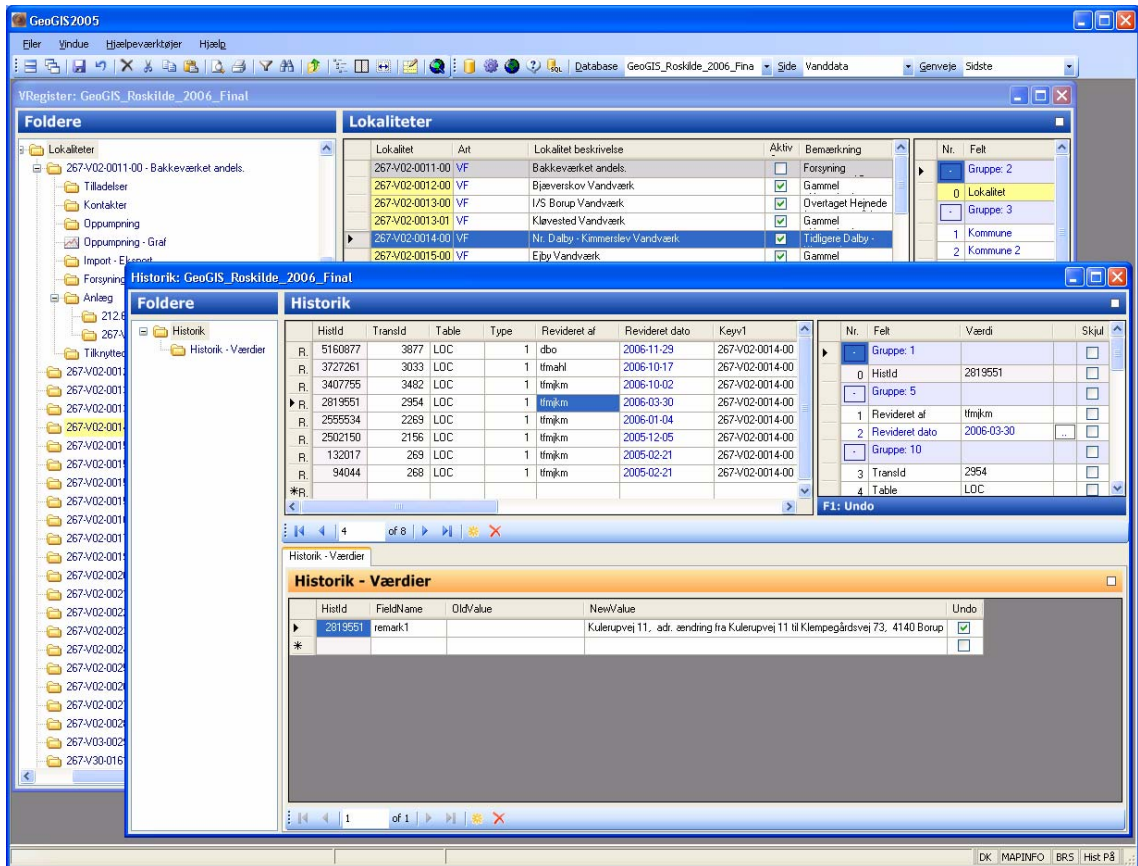


Figure 49. History list of a single update.

Here the user may flip through the different updates performed on the database row. By clicking *Undo* the user can undo an update and return to the former values.

## Transactions

If you want an overview of all transactions performed on the database, you can do it by selecting the page: *History*:

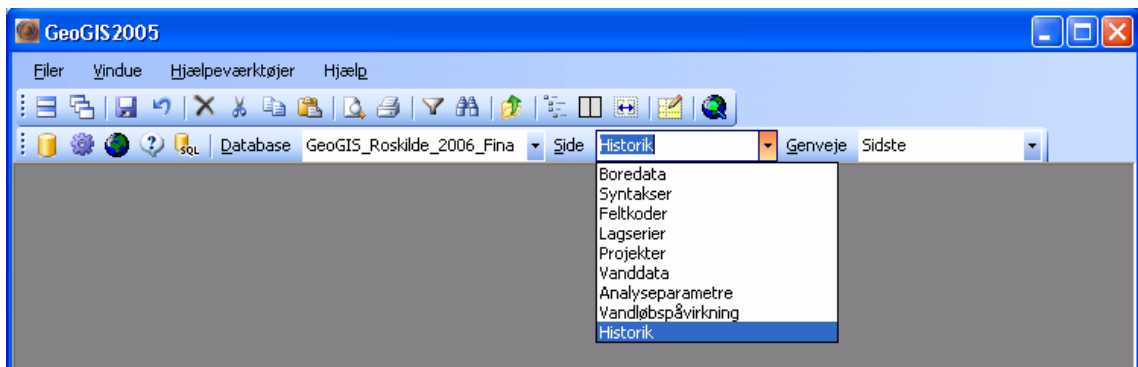


Figure 50. Selecting the History page of a given database.

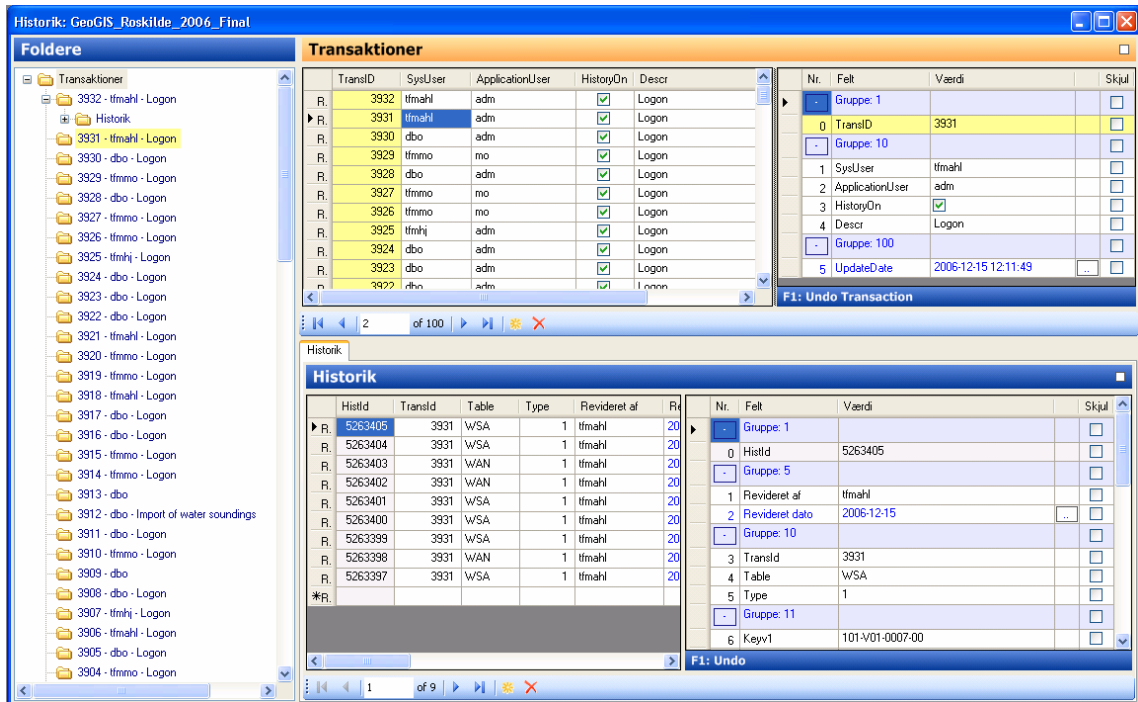


Figure 51. List of history transactions.

In the folder: *Transactions*, the user may see the different transactions together with their updates. The user may undo entire transactions or individual updates.

It is possible to start and stop the History function in the system's status bar:



Figure 52. Click on **Hist On / Hist Off** starts and stops the History function.

The user may like to stop the History function, when doing heavy load operations. Only a administrator to the SQL Server database can stop the History function.

#### 4. The Meta database

GeoGIS2005 is built in a general framework. Behind all windows, there is a number of data defining the appearance and the "dialog" between the windows. GeoGIS2005 is delivered with a complete set of windows ready for use within soil engineering, water supply etc. The GeoGIS2005 framework gives basis functionality to all windows, graphs etc. In principle, the framework can be used by all kinds of databases and is consequently not bound to geological or environmental engineering data.

The Meta database is a central part of the framework used for:

- Definitions of tables, fields and relations
- Definitions of headlines, lead texts and codes dependent on language

- Definitions of windows and their mutual hierarchy
- Definitions of the connection between databases and pages

The Meta database can be called from the System menu:

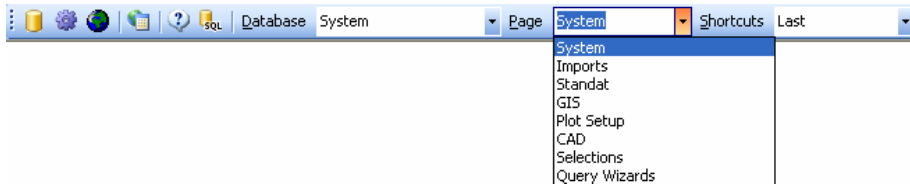


Figure 53. Calling Meta database.

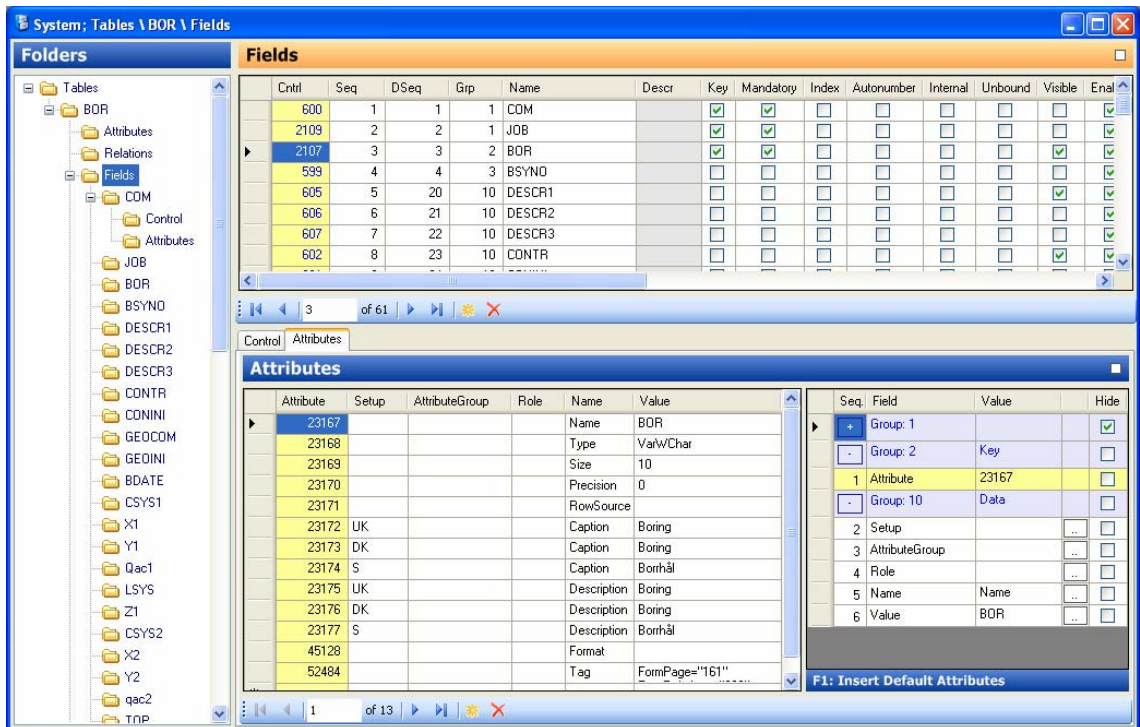


Figure 54. Example of table definition in the Meta database.

Meta data for the current window can also be called by use of the shortcut menu:

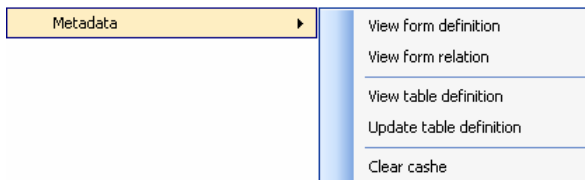
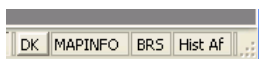


Figure 55. Functions for calling Meta data for a single window.

An important function of the Meta database is to define headlines and lead texts. The user may see the actual language (Setup) in the system's Status bar:



The language may be changed by clicking the Setup button.

## 5. Description of Functions

Below is a short description of the functions in GeoGIS2005.

### 5.1 The Main Menu



#### File

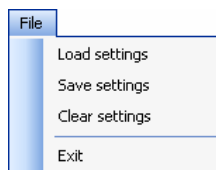


Figure 56. The File menu - used for saving and exchanging settings.

In the File menu, there are functions for saving settings of GeoGIS2005. The user can create one or more settings each having a setting suitable for the task in question. A setting defines the attached databases and shortcuts.

#### Window

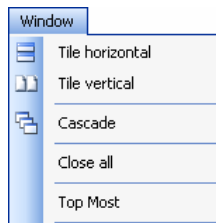


Figure 57. The Window menu – used for arranging database windows.

In the Window menu, there are functions to arrange open database windows. In case there are several database windows open, you will see a list of the windows at the bottom. The active window is ticked off.



## Utilities

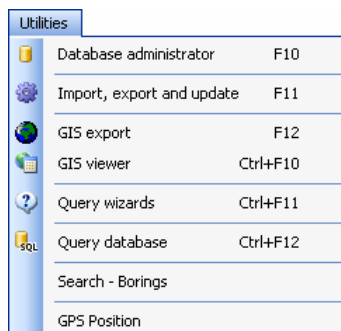


Figure 58. The Utilities menu contains the GeoGIS2005's support tools.

In the Utilities menu, there are tools for processing and visualisation of data. The functions are described in detail in section 3.

## Help

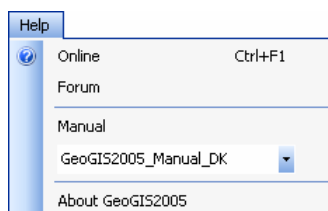


Figure 59. The Help menu.

In the Help menu, there is a link to the GeoGIS2005 homepage and information about the installed version.






Manuals in pdf format are listed in the Manual combo box.

## 5.2 Toolbars and Shortcut menus

### 5.2.1 Database Toolbar





















The database toolbar is used for calling database tools and open database windows:

	Database Administrator	Open dialog for setting up databases
	Import, export and update	Open dialog for data exchange
	GIS export	Open dialog for export of data to GIS
	Search guides	Open dialog for predefined search
	Own queries	Open dialog for creating Own queries
<b>Database</b> Fehmarn	Open selected database with standard page	Open a new database window containing data from the selected database
<b>Side</b> Boredata	Open selected database with selected page	Open the selected page in the active database window. A page is a predefined collection of for example lists, graphs and documents describing a subject/field of activity. Access to a certain kind of database is arranged in a number of "pages". The pages are called from the system's main menu.
<b>Genveje</b> Sidste	Show shortcuts in list	It is possible to make a shortcut for menu often used. Typical shortcuts could be:  A specific drilling A specific waterworks Newly entered samples of water A particular user defined search  "Previous" is the last used menu. The shortcuts can refer to different databases. The user can indicate a suitable lead text for each shortcut. A specific shortcut can be selected as "start-up page".

### 5.2.2 Form Toolbar



The form toolbar is used for arranging and editing database windows:

	Arrange	Arrange open database windows in such way that the windows make the best possible use of the screen without the windows overlapping
	Cascade	Arrange open database windows in such way that they overlap each other with the title visible
	Save updates	Save adjustments
	Undo updates	Undo adjustments performed since last update
	Delete selected adjustments	Delete selected rows
	Cut selected rows	Move/transfer selected rows to the clipboard from where you can copy
	Copy selected rows	Copy selected rows to the clipboard
	Insert copied rows	Insert copied rows
	Print preview	Show a preview of the print on the screen before it is printed
	Print	Print without preview
	Find	Open dialog for search in data present in the active list
	Find and replace	Open dialog for search followed by replace
	One level up	Select the folder one level above in the tree structure
	Change tree window	Manage whether the tree structure should be viewed
	Change form split	Manage split of the active window. The shift is between 3 views: Data, data definitions and both data and definitions
	Adjust columns	Adjust the column width in the active list so everything is visible within the columns
	Order a drawing	Open dialog for ordering a drawing
	Show selected data in GIS	Open GIS – and show selected rows

### 5.2.3 Drawing Toolbar



See section 3.5 for a detailed description.

## 5.3 Shortcut Menus

### 5.3.1 The Tree Window

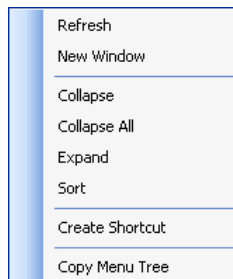


Figure 60. Shortcut menu to the tree menu.

In the right-click menu in the tree structure, there are tools for navigating and changing the tree menu:

Refresh	Used for updating the tree menu, if it is dependent on entered or changed data.
New window	Used for opening a new database window with the selected node as a new main node.
Collapse	Used for collapsing a node and all related sub-nodes.
Collapse All	Used for collapsing all node.
Expand	Used for expanding a node.
Create Shortcut	Used for creating a shortcut to the selected node. See also section 2.3.
Copy Menu Tree	Used for copying the tree structure to the clipboard.

### 5.3.2 Data Window

In the shortcut menu in the data window, there are tools to find data, call functions and export data:

<table border="1"> <tr><td>Edit</td><td>▶</td></tr> <tr><td>Find and replace</td><td>Ctrl+F</td></tr> <tr><td>Filter selected</td><td>Ctrl+K</td></tr> <tr><td>Search</td><td>Ctrl+S</td></tr> <tr><td>Insert into selection</td><td></td></tr> <tr><td>Open in new window</td><td></td></tr> <tr><td>Up level</td><td>Ctrl+U</td></tr> <tr><td>Refresh data</td><td>Ctrl+R</td></tr> <tr><td>Layout</td><td>▶</td></tr> <tr><td>Refresh layout</td><td>Ctrl+Shift+R</td></tr> <tr><td>Print</td><td>▶</td></tr> <tr><td>Draw</td><td>Ctrl+O</td></tr> <tr><td>Export</td><td>▶</td></tr> <tr><td>GIS</td><td>▶</td></tr> <tr><td>History</td><td>Ctrl+H</td></tr> <tr><td>Metadata</td><td>▶</td></tr> </table>	Edit	▶	Find and replace	Ctrl+F	Filter selected	Ctrl+K	Search	Ctrl+S	Insert into selection		Open in new window		Up level	Ctrl+U	Refresh data	Ctrl+R	Layout	▶	Refresh layout	Ctrl+Shift+R	Print	▶	Draw	Ctrl+O	Export	▶	GIS	▶	History	Ctrl+H	Metadata	▶	<table border="1"> <tr><td>Edit</td><td>▶</td></tr> <tr><td>Accept changes</td><td>Ctrl+A</td></tr> <tr><td>Reject changes</td><td>Ctrl+Q</td></tr> <tr><td>Delete rows</td><td>Del</td></tr> <tr><td>Copy selected rows</td><td>Ctrl+C</td></tr> <tr><td>Cut selected rows</td><td>Ctrl+X</td></tr> <tr><td>Paste copied rows</td><td>Ctrl+V</td></tr> <tr><td>Copy and paste append rows</td><td>Ctrl+Ins</td></tr> <tr><td>Append rows</td><td>Ctrl+B</td></tr> <tr><td>Fill column</td><td>Ctrl+Shift+F</td></tr> </table>	Edit	▶	Accept changes	Ctrl+A	Reject changes	Ctrl+Q	Delete rows	Del	Copy selected rows	Ctrl+C	Cut selected rows	Ctrl+X	Paste copied rows	Ctrl+V	Copy and paste append rows	Ctrl+Ins	Append rows	Ctrl+B	Fill column	Ctrl+Shift+F
Edit	▶																																																				
Find and replace	Ctrl+F																																																				
Filter selected	Ctrl+K																																																				
Search	Ctrl+S																																																				
Insert into selection																																																					
Open in new window																																																					
Up level	Ctrl+U																																																				
Refresh data	Ctrl+R																																																				
Layout	▶																																																				
Refresh layout	Ctrl+Shift+R																																																				
Print	▶																																																				
Draw	Ctrl+O																																																				
Export	▶																																																				
GIS	▶																																																				
History	Ctrl+H																																																				
Metadata	▶																																																				
Edit	▶																																																				
Accept changes	Ctrl+A																																																				
Reject changes	Ctrl+Q																																																				
Delete rows	Del																																																				
Copy selected rows	Ctrl+C																																																				
Cut selected rows	Ctrl+X																																																				
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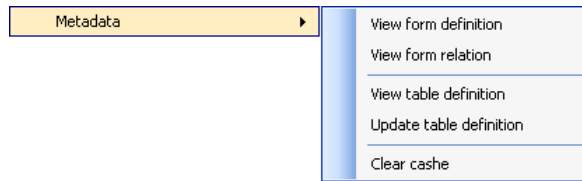
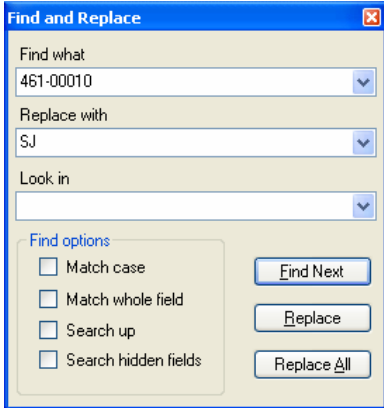


Figure 61. Shortcut menu to the data window.

<p><b>Edit</b></p> <ul style="list-style-type: none"> <li>- Save updates</li> <li>- Undo updates</li> <li>- Delete rows</li> <li>- Copy selected rows</li> <li>- Cut selected rows</li> <li>- Insert copied rows</li> <li>- Copy and insert rows</li> <li>- Insert rows</li> <li>- Fill in column</li> </ul>	<p>Menu for editing functions</p> <p>Used for saving changes. Changes are marked with a turquoise colour. Note that also deleted data should be deleted with this function.</p> <p>Used for undoing database updates.</p> <p>Used for deleting selected rows.</p> <p>Used for copying selected rows.</p> <p>Used for cutting selected rows i.e. they are copied and deleted.</p> <p>Used for inserting copied rows from the active row i.e. any existing data are overwritten.</p> <p>Used for copying and inserting rows in a workflow.</p> <p>Used for inserting previously copied rows.</p> <p>Used for filling in empty fields in the active column with the selected value.</p>
<p><b>Find and Replace</b></p>	<p>Start the Find and Replace function:</p>  <p>Note that the function can also be used as a search function only.</p>
<p><b>Filter</b></p>	<p>Filter data in such way that only rows containing the selected values are listed.</p>
<p><b>Search</b></p>	<p>Start the standard search function. See section 3.4.1.</p>
<p><b>Up one level</b></p>	<p>Used for selecting a folder one level above in the tree structure.</p>
<p><b>Refresh data</b></p>	<p>Used for refreshing data from the database. You get the same result by double clicking the window heading:</p>

Layout	Menu for adjusting the window layout
- Save form settings	Used for saving a form setting so the form will open with the same setting next time it is opened.
- Select main form	Used for bringing the main form into focus.
- Next form	Used for bringing the next form in the database window into focus.
- Change tree window	Used for changing the view of the tree window.
- Change tree window	Used for changing between detail and list view.
- Change form split orientation	Used for changing between vertical and horizontal placement of the detail window.
- Change window split	Used for changing between views of subwindows.
- Change window split orientation	Used for changing between vertical and horizontal placement of subwindows.
- Change main form view	Used for changing between view of just the main form or the main form including subforms.
- Adjust row height	Used for adjusting the row height so that all data can be viewed without scrolling.
- Select standard row height	Used for selecting the standard row height for all rows.
- Freeze rows	Used for freezing selected rows so they will not move when scrolling.
- Release rows	Used for releasing frozen rows.
- Adjust columns	Used for adjusting the column width to the data.
- Freeze columns	Used for freezing selected columns so they will not move when scrolling.
- Shift database toolbar	Used for shifting between viewing the database toolbar or not. As standard, it is shown.
- Shift form toolbar	Used for shifting between viewing the form toolbar or not. As standard, it is shown.
- Shift drawing toolbar	Used for shifting between viewing the drawing toolbar or not. As standard, it is not shown.
- Use expanded detail window	Used for changing the view to expanded detail window. The expanded detail window gives the user a possibility to specify how the combo boxes should be shown.
Refresh layout	Used for reloading data and meta data and thereby refreshing the outlay of a form.
Print	This menu is used for printing.
- Print	Used for printing out a window to a printer.
- Print Preview	Used for getting a preview on the screen.
- Page Setup	Used for changing page setup.
Export	This menu contains functions for export of form data to Excel and XML
- Excel	Used for exporting data to Excel
- XML	Used for exporting data to XML
GIS	This menu contains functions to export data to GIS. See also section 2.5.1
- GIS start	Used for starting the selected GIS system. As most GIS systems have to go through a long upstart procedure, it is most convenient to start the GIS system before you send data from GeoGIS2005.
- GIS export	Used for exporting all table rows in the present form to GIS.

- GIS export selected	Used for exporting all selected table rows in the present form to GIS.
- GIS centre selected	Used for setting focus centres on the coordinates in the selected rows. Indication circles are drawn, but data are not exported.
Metadata	This menu contains functions for listing and updating metadata. The functions are primarily used when developing new forms.
- See form definition	Used for listing the metadata that describes the present form.
- See form relation	Used for listing the metadata that describes how the present form is related to other data.
- See tabel definition	Used for listing the metadata that describes the present form's main table.
- Update tabel definition	Used for updating the metadata that describes the present form's main table with data from the present database.
- Delete buffer	Used for deleting the internal form buffer so all meta data can be read again as the different windows are revisited.

## 6. Installation

### 6.1 Hardware and Software requirements

The system must meet the following requirements:

- Microsoft Windows XP or later
- Microsoft .NET framework 2.0
- Internet browser like Microsoft Internet Explorer 6.0 or more

The customer will provide for purchase and installation of relevant viewers: (E.g. Acrobat Reader, DWG/DXF - viewer etc.), Office programs (e.g. Microsoft Excel), data-base software (e.g. Microsoft Access or SQL Server), GIS software (e.g. MapInfo, ArcGIS etc.) and CAD software (e.g. AutoCAD or Micro Station).

### 6.2 Installation

You may install GeoGIS2005 from the Internet or from CD.

You get the installation package from GeoGIS2005's homepage:  
[www.GeoGIS2005.Ramboll.dk](http://www.GeoGIS2005.Ramboll.dk)

After the installation, you start the program by using the icon on the desktop:



### 6.3 File Structure

GeoGIS2005 will be installed with the following structure:

**\GeoGIS2005** Main folder for the program



<b>\Access</b>	Contains various system databases
<b>\Bin</b>	Contains programs for executing
<b>\Data</b>	Folder for temp data
<b>\Db</b>	Standard folder for databases
<b>\Doc</b>	Contains documentation in the form of PDF files
<b>\DSCache</b>	Contains temporary files for use in connection with Webservices
<b>\Geoids</b>	Folder for coordinate definitions
<b>\Images</b>	Contains various bitmap files used by the drawing program
<b>\Lib</b>	Contains symbol files used by the drawing program
<b>\Map</b>	Contains symbol files used by the drawing program
<b>\Script</b>	Contains script files used by the drawing program
<b>\Work</b>	Work areas

The most important system databases are:

GS05Sys.mdb	Meta database
G2005.mdw	Workgroup file for system databases
GS05AGS.mdb	Database for conversion of AGS data
GS05CAD.mdb	Database for setting up CAD extracts
GS05D.mdb	Seed Database for new GeoGIS databases
GS05Draw.mdb	Database for setting up plotting drawings
GS05GIS.mdb	Database for setting up GIS extracts
GS05Import.mdb	Database for setting up import- and export programs
GS05XML.mdb	Temporary database, used when entering standard files

The user can choose any main folder for installation.

#### 6.4 MapInfo Tools



The GeoGIS2005 MapInfo toolbar is defined in the file:

..\Bin\GeoGIS2005.MBX

The toolbar is normally added to MapInfo automatically if the program is called from GeoGIS2005. The user may also add the function manually by using the MapInfo Tool Manager.

#### 6.5 ArcGIS Tools

As standard, the GeoGIS2005 ArcGIS tools may be used for ArcGIS version 9.0, 9.1 and 9.2. Contact Rambøll for support of earlier versions.



The GeoGIS2005 ArcGIS toolbar is defined in the files:

```
..\Bin\GeoGIS2005ArcGIS.dll  
..\Bin\GeoGIS2005ArcGIS.reg  
..\Bin\GeoGIS2005ArcGIS-Install.bat
```

When installing GeoGIS2005 for the first time and when updating the program, the file GeoGIS2005ArcGIS-Install.bat will be executed.

Next the toolbar in ArcMap > Tools > Extensions should be activated:

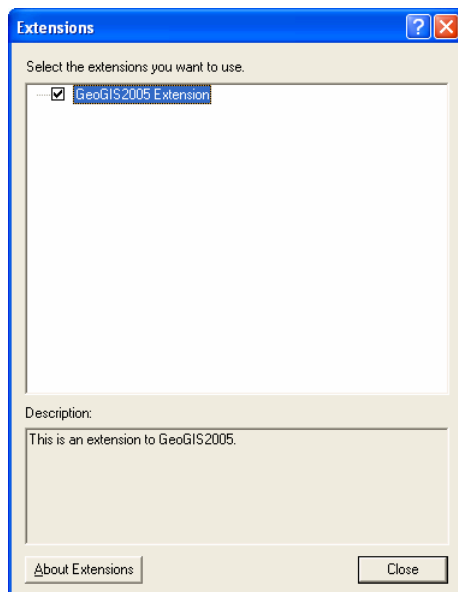


Figure 62. Activating GeoGIS2005 toolbar in ArcGIS/ArcMap

## 6.6 Licenses

When GeoGIS2005 is installed on a PC and executed for the first time, it is provided with an installation number. The user must have a corresponding set of license numbers before being able to use the program.

How to obtain license numbers is described in detail in section 3.1.4.

## 6.7 GeoGIS2000 databases

GeoGIS2005 can exist together with earlier versions of GeoGIS2000 and work with the same databases. There is no problem with running both versions in a transition phase.

When installing GeoGIS2005 the user can choose to enter the attached databases from the GeoGIS2000 installation. In this way, the user will find it easy to get started with the previously used databases.

## 7. User Support and Forum

The address [www.GeoGIS2005.Ramboll.dk](http://www.GeoGIS2005.Ramboll.dk) gives access to a user forum for registered users and possibility to get new versions of GeoGIS2005 etc.

### 7.1 Download of GeoGIS2005

The Internet address: [www.GeoGIS2005.Ramboll.dk](http://www.GeoGIS2005.Ramboll.dk) gives access to the user support page:



Figure 63. GeoGIS2005's homepage.

By clicking **Download**, it is possible to download installation files and license conditions:

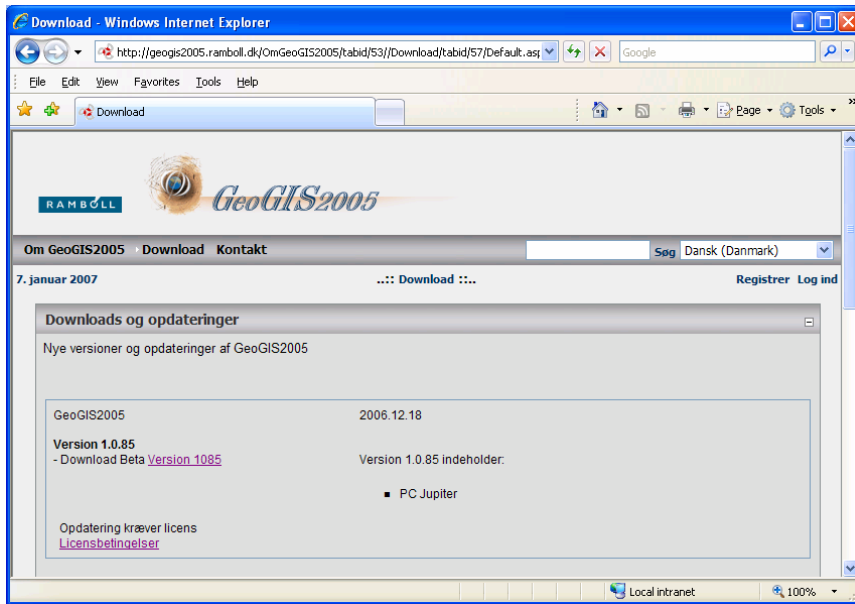


Figure 64. Download of new versions and updates to GeoGIS2005.

By clicking Download, you can save and subsequently install the installation package:

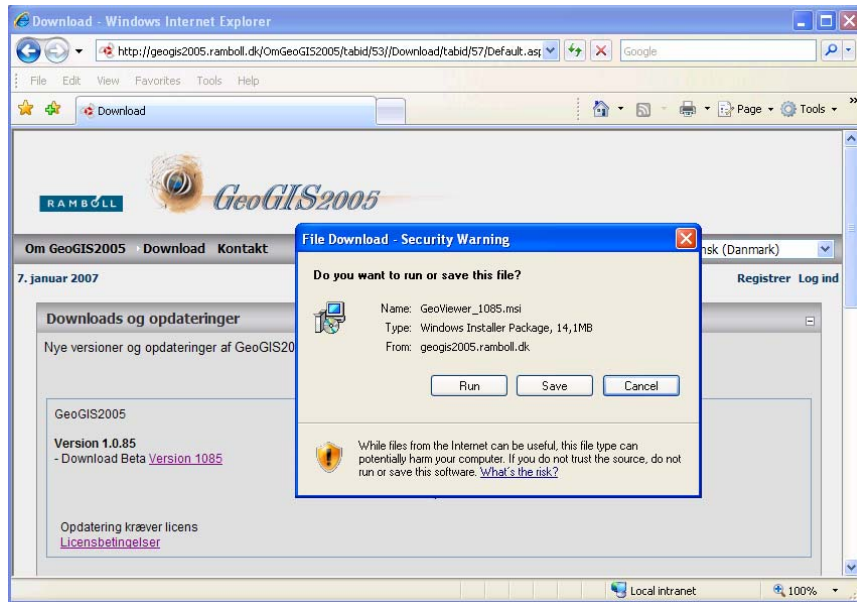


Figure 65. Installation from download page.

## 7.2 Forum

By click on Forum, you get access to GeoGIS2005's user forum, where it is possible to find answers to your questions, ask questions yourself or comment other GeoGIS user's contributions and questions.

You get access to GeoGIS2005's user forum by registering as a user on [www.GeoGIS2005.ramboll.dk](http://www.GeoGIS2005.ramboll.dk) with user name, password and e-mail. It is important that the e-mail address is identical to the one used when installing GeoGIS2005 – See the description of the Database Administrator – Licenses tab, section 3.1.4.

The forum may also be called from the help menu in GeoGIS2005.