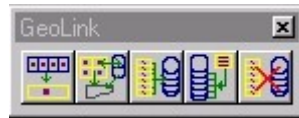


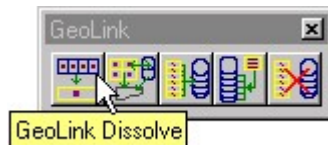
GeoLink



Feature Summary

GeoLink is a collection of MDL (MicroStation Development Language) programs, written by Australian Data Systems. These programs provide additional functions that are not a standard part of MicroStation or MicroStation GeoGraphics. GeoLink consists of five tools.

GeoLink Dissolve



Merges/copies the database records that are associated with the topological areas displayed with the option to dissolve/merge the graphical elements that make up those topological areas and create new features in the active design file. The areas processed can be in the active design file or in reference file(s). The operator selects the feature code to attach to the newly created graphics (shapes or boundaries and centroids).

Dissolve Graphics processing option

The Create pulldown menu allows the operator to specify the type of graphic boundary features to create: Boundaries or Shapes. A Boundary/Shape Feature list box is displayed to allow the operator to choose the GeoGraphics feature to attach to the newly created boundary elements.

Create Centroids processing option

If this processing option is ticked, a second list box is displayed to allow the operator to choose the GeoGraphics feature to attach to the newly created centroid elements.

Merge Database processing option

Selecting this option makes a Set Database pushbutton appear. Pressing this button opens the Dissolve Merge Database Fields dialog box that allows the operator to specify which database records should be combined/copied and how each field in these records should be processed.

GeoLink Chklink



Validates and reports on the integrity of GeoGraphics data.

- For featurised graphical elements, check that the feature code still exists in the project database and that the type of element that it is attached to is appropriate for the feature definition.
- For graphic elements with database links, check that the entity number exists in the mscatalog table. If it is in the mscatalog, check that the record for the specific link still exists in the attribute table.
- Additional checks include: Maximum number of links per table per element; One element per link; Missing graphics; Missing features; One record per link; Missing map ID; Missing attribute table; and an option to remove orphan links.

Database Tables and Feature Descriptions

Depending on the specific checking options selected, attribute tables and feature codes defined in the GeoGraphics project database will be made available for selection.

Processing Options

Select the graphic elements to process, ie entire design file, fence, or selection set.

Validation Functions performed

1. For featurised graphic elements, check that the feature code still exists in the project database and that the type of element that it is attached to is appropriate for the feature definition. The direction of this check is from the design file to the database. Examples of errors that will be detected:
 - A feature called Contour.Minor.Line has been attached to an element in the design file, but since the attachment was made, the feature code has been deleted from the database.
 - In the feature setup the Element Type has been defined as a Line and the Element Strength has been set to Exact, but the feature code is attached to a Text element.
2. For graphic elements with database links, check that the entity number exists in the MSCATALOG table. If it is in the MSCATALOG, check that the record for the specific MSLink still exists in the attribute table. These attachments that no longer exist in the database, are called Orphan Links. The direction of this check is from the graphics to the database.

Additional Validation Functions:

3. Remove Orphan Links
If a graphic element has a database link for which the corresponding record no longer exists (an orphan link), the link is removed from the element and the element rewritten into the design file. If the rewrite fails, an appropriate error message will appear in the log file. The direction of this check is from the design file to the database.
4. Maximum number of MSLinks per Table per Element
Check that there are no more than a set number of attachments to the same database table on a specific element. For example, it may be invalid for a centroid to have more than one attachment to a specific table, but when the linkages have been copied from

the centroids to the boundaries, it is quite valid to have more than one link from a boundary element to the same attribute table, one link for each adjoining area. The direction of this check is from the design file to the database.

5. **One Element per MSLink**
Check that each record in the selected database table is linked to only one element in the active design file. Sometimes it may be valid to have the same database record linked to more than one element, for example where links on the centroids have been copied to the boundaries. The direction of this check is from the database to the design file.
6. **Missing Graphics**
Select attribute table(s) to check. Check that every record in the selected table(s) that has a MapID for the active design file is linked to an element in this design file. For this option to work correctly, the MapID must have been updated in the database records. This check automatically processes the entire design file.
7. **Missing Features**
Check that all graphic elements have been featured. The direction of this check is from the design file to the database.
8. **One DB Record per MSLink**
Check that for all database links found in the active design file, there is only one corresponding record in the database table. The direction of this check is from the design file to the database.
9. **Missing MapID**
Select attribute table(s) to check. Check that the MapID in every database record in the selected table contains a non-zero value. This check is done purely on the selected database table and does not involve the graphic elements in the design file.
10. **Missing User Attributes**
Select attribute table(s) and for each, the feature(s) to check. Check that the specified feature has a link to the specified database table. This check is done in two phases. Errors are reported if an element that is one of the selected features does not have a link to the database table selected. Errors are also reported if an element is encountered that has not been featured as one of the selected features, but it has a link to the selected database table.

GeoLink Verlink



An aid to visually verify and optionally update individual database links that are attached to selected graphical elements in the active design file. The operator can choose the attribute table to check.

Element Information

For each record processed, some information about the particular graphics element is displayed to assist in the verification process. The element information includes the element type (text node, linestring, etc), its actual file position within the design file, the number of

links on the element to the selected database table, the number of feature codes attached to the element, and the corresponding feature description(s).

Processing Options

Select the graphic elements to process, ie entire design file, fence, or selection set.

Verification Start

A pushbutton to start/restart verifying the linked database records. A dialog box will display to allow the user to specify the filename and location of a log file to create. If a file of that name already exists and the verification is started from the first record (0 or 1 in Record No), an appropriate warning will display with the option of overwriting the file. If the log file already exists, but the verification is not started from the beginning, a 'Restart at' or 'Skipping to' message is recorded in the existing log file and new messages are appended to the end.

Verified

A pushbutton to confirm that the contents of the database record currently displayed in the SQL dialog and attached to the current element is correct. A 'Verified' message will be written to the log file. Furthermore, if the database record contains a field called 'Link_Chk_Date', the current date will be recorded in it, and if the database record contains a field called 'Link_Chk_By', the user's identification will be recorded there.

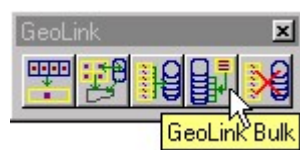
Update

A pushbutton to force the database record to be rewritten with the values as displayed/entered/changed in the SQL dialog. Pushing the Update button will also verify the link (See Verify). An 'Updated and Verified' message will be written to the log file.

Detach

A pushbutton to remove the link from the current element to the database record currently displayed in the SQL dialog. The element is rewritten to the design file without the specific link. Two messages are written to the log file: 'Link Detached' and 'Element Rewritten'.

GeoLink Bulk



Provides a bulk update facility for a database table. The records to be updated can be selected either by executing an SQL query, or by identifying graphical elements in a design file. The two methods can be combined to append records to an existing list. The database records are displayed in tabular form. Sorting and updating of records are controlled through this interface.

There are two main methods for creating a collection of database records to be updated:

- By executing an SQL query, or
- By identifying graphical elements in a design file, specifying an attribute table to be updated and building a list of records from that table that are linked to the specific elements.

These two methods can be combined to append records to an existing list.

SQL Statement:

A bulk update operation based on an SQL query can be initiated in one of two ways:

- Entering a query in the SQL Statement window, or
- Building the query in the Visual SQL Query Builder dialog

If the SQL statement does not contain the database fields MSLINK or MAPID, a warning message will display that these fields are required for Updating, Creating a selection set Highlighting or Locating graphic elements.

Load from Graphics: Individual, Selection Set, All or Fence

This method of selecting database records processes only features that are displayed. First choose the appropriate attribute table to be updated and then hit one of the pushbuttons to build a collection of database records.

When the SQL statement is executed or the graphical elements have been identified, a second ADS Bulk Update Database dialog box will display that consists of two sections: a vertical list of column names on the left and the result of the query in browser (tabular) format on the right:

The column list on the left contains all the columns included in the SQL statement and by default all the columns are selected to display on the right in the tabular results window. When this dialog first displays immediately after the SQL statement is executed, the browser (tabular) window on the right contains all the columns as well. After this initial display, the operator can manipulate the appearance of the browser by selecting/deselecting column names from the list on the left.

Sort options, Ascending/Descending

Use these fields/buttons to determine/change the sequence in which the results are displayed in the browser. Choose one of the columns included in the initial SQL statement even though that column may not be selected from the list to display in the browser. Specify whether to sort the values in this column in either ascending or descending order.

Update options and Action options.

Use these options to specify how the data in the selected records should be updated. Choose from one of the columns included in the initial SQL statement even though that column may not be selected from the list to display in the browser. If the selected column is defined in the database as a text/character field, the allowable actions are to:

- Replace the existing value in the field with a new value;
- Append a Suffix to the existing value:or
- Prepend a Prefix to the existing value.

Enter the new value or the Suffix or Prefix in the field to the right of the action button. If the selected column is defined in the database as a numeric field, the allowable actions are to either Replace the existing value in the field with a new value, or to perform an arithmetic function on it, ie add, subtract, multiply or divide by the value specified. Enter the appropriate value in the field to the right of the action button.

Selecting the records to update

From the results of the SQL statement displayed in the browser window, select the database record(s) to update. Use the CTRL and SHIFT keys to select more than one record at a time.

Create SelectionSet and Highlight Elements

Buttons are supplied as an aid to the operator to perform a visual verification of the records that are to be updated. Hitting either of these buttons will cause the program to try and locate the graphic elements that are linked to the records selected in the browser. If the elements are not in the active design file, the relevant maps will be attached as reference files first.

Locating a graphic element from the browser

Double-click on a record listed in the browser to zoom in on and select the associated graphic element in the design file. If the element is in a different design file, the relevant design file will first be attached as a reference file.

GeoLink Remlink



Provides the ability to remove unwanted or redundant database links from selected graphical elements in the active design file.

Entity Number, MSLink Number and DB Type

Use these fields and options to specify the specific database linkages to remove. Enter numbers in Entity and MSLink or enter a "*" to remove linkages pertaining to all entity numbers or all mslink numbers. Use the DB Type option button to choose a specific database type. The "All" option will remove linkages to all databases, regardless of type.

Processing Options

Select the graphic elements to process, ie entire design file, fence, or selection set.



Australian Data Systems

271 Great Eastern Highway, Belmont Western Australia 6104
Ph: +61 8 9479 1338 Fax: +61 8 9479 1353
ads@ozdata.com.au www.ozdata.com.au