D2M - MicroStation to Mapinfo Translator (v8)

User Guide
(for MicroStation v8)

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Introduction

MicroStation to MapInfo Translator D2M application provides the tools to translate any MicroStation design file(*.dgn) into MapInfo mif and mid format. The program supports the conversion of 2-D and 3-D design files (including Z value as an attribute) as well as database conversion if required.

D2M enables the user to separate the data residing in a design file, based on level and/or element type definition(s). Up to 63 separate mif and mid sets of files may be generated from one design file. User defined setups can easily be stored and retrieved.

D2M maintains MicroStation symbology (colour, weight, style) as well as font definitions. The corresponding (as close as possible) MapInfo values are provided - however the user can modify the symbology as required.

D2M preserves the integrity of MicroStation cells by replacing them with MapInfo symbols or processing all of the cell components.

D2M provides the user with powerful capabilities for translating database information associated with processed MicroStation elements. Three options are provided :

Partial database transfer – to translate database information available within the design file only (mslink value).

Full database transfer – the record from the selected database table attached to the graphical element is directly converted into the MapInfo mid file (together with the graphical data being translated).

Tag transfer - the selected tag definition is fully converted into the MapInfo mid file, and the corresponding tag data attached to the *Graphical element.*

In addition, **D2M** provides the facility to save Z-values into the MapInfo mid file as the additional main attribute. The Z-value could be one of the Z ranges (when stored with 2-D element) or the Z-value for 3-D element (average).

Installation

The software is normally downloaded from our web site or E-mailed by Lilac Crest. To load the software, copy MDL routine d2m.ma into the MicroStation subdirectory defined by the MS_MDL MicroStation environment variable. Please make sure that d2m.ma file is write enabled. In addition d2m online help file d2m.chm needs to be copied into your nominated help directory, which should be included in the paths defined by MS_HELPPATH MicroStation environment variable.

When coordinate systems are required, that is different to the NonEarth Coordinate system, the environment variable D2M_PRJ needs to be defined to point to the ascii file describing the required coordinate system - the **full file path** needs to be used. This file is fully compatible with MapInfo.

The MapInfo supplied file may be used (mapinfow.prj) i.e. the environment variable D2M_PRJ can be added via Control Panel->System->Advanced->Environment Variables

In case when the system environment variable D2M_PRJ is not defined, D2M tries to resolve the symbol by looking at MicroStation configuration variable D2M_PRJ .

The mapinfow.prj (or copy of it) can be customized and may include only the coordinate systems that are of interest to the user, rather then the whole coordinate system list.

Running D2M

In MicroStation , type mdl load D2M in the MicroStation Command Window, or select the Utilities->MDL Applications from the pull down menu, select MDL application, and then load **D2M**.

The very first time when **D2M** is loaded, the initial Dialog Box describing the license conditions will appear. This dialog enables the user to enter Organization name and software serial number, which in turn activates **D2M** (unless demo version with predefined demo serial number is used). The serial number is obtained from**Lilac Crest Pty. Ltd.**(or your dealer) when the software is purchased or provided as a demo copy.

Once the organization and the serial number are keyed and the **Verify** button is pressed, the serial number is verified and if successful, this information is saved.

By selecting the **Verify** button, the user accepts the license conditions.

Next time when the software is run and proper license information was entered, this menu will not be displayed. By hitting **Done** the above dialog box is dismissed and the main working menu is displayed.

See also About D2M

Menus

D2M uses main menu as the central dispatch point. which provides access to all of the other functions and submenus within **D2M**.

D2M is designed to work in two specific modes :

Definition Mode - each specific "portion" of the design file (and database) is defined into a so-called "run".

Processing mode - when all or some of the previously defined "runs" are chosen for processing.

This approach enables the user to define whole series of "runs" and then select some of them depending on data processed at that time, which means, that the user can split the data into separate parts.
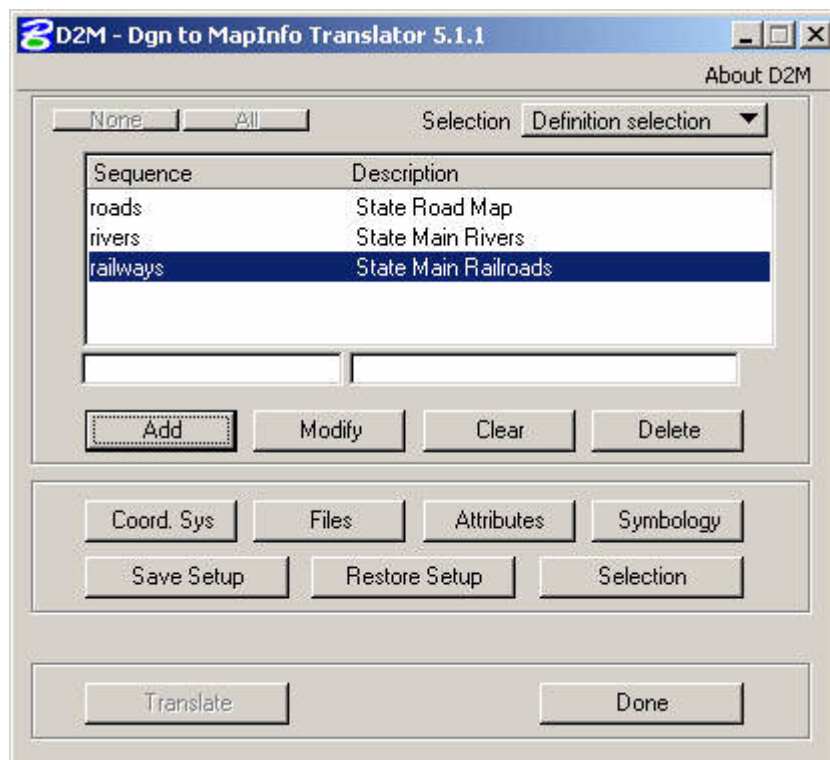
The above menu provides an example of the mentioned above two mode approach. For example, the user can define road, rivers and railway "runs", however, for the final processing only roads and railways could be selected.

Main Menu

This menu provides the access to all the other menus available. It is also the central focus of this application, since all the other functions (menus) return to this menu.

The top right option button **"Definition Selection"** enables the user to switch between the different modes **(Definition and Processing)**. The Definition Mode enables the user to define the details of each individual "run", whereas the Processing Mode is used when the final processing is to about to takes place.

The two pushbuttons on the top left of the menu - **None** and **All** are used during the Processing Mode only. These buttons assist the user in selecting listed "runs" for processing. The **None** button deselects the "runs" if any are already chosen. The **All** button selects all the "runs" listed for processing.

In order to enter a (create) new "run", two text entry fields are provided on the menu. The very first field (from the left) is usually used to record the "run" name whereas the other, is used to give more detailed description of the particular run.

Once the data is keyed- in, the **"Add"** button can be used to move this information into the above list box, and this in turn enters this definition into **D2M**.

The other pushbuttons used for sequence definitions are - **Modify, Clear and Delete.**

The **Modify** button changes (modifies) the selected row of listbox information by copying the information from text entry fields into the selected (highlighted list box) row.

The **Clear** button deletes **All** "run" definitions from the list.

The last button in the series the **Delete** button selectively removes **One** (highlighted) row from the "runs" list box.

The above functions are provided for "run" list maintenance. The other buttons invoke different submenus, (except **Translate** and **Done** buttons which cause the translation or **D2M** to exit).

The following buttons invoke other submenus:

Coord Sys - Defines coordinate system. If not used, the default of Non-Earth coordinate system is applied.

Files - Defines output MapInfo *.mif and *.mid files (one pair for each run), as well as **One** log file for all runs.

Attributes - Defines database translation parameters. It is also used to translate Z values.

Symbology - Defines and matches as close as possible the corresponding MicroStation - MapInfo symbology (colours, fonts, style etc.)

Save Setup - Saves the current run definitions into the file.

Restore Setup - Restores previously stored definitions from user nominated file.

Selection - Selects MicroStation level(s) and element types for each specific "run". When the specific run is executed, only selected element types residing on a selected MicroStation levels are processed.

The remaining two buttons start the translation translating and exit application:

Translate - Invokes translation process - all selected "runs" are translated one at the time. After completing each sequence, the appropriate message defining the number of elements selected and successfully translated is displayed. If the log file was defined, more information regarding the processing may be found in this file, as well as any error conditions.

Done - Exits **D2M** by offloading **D2M** from MicroStation.

Some of the buttons are only enabled for one specific Mode (Processing or Definition). These buttons are made active (or inactive) when a specific mode is selected/deselected.

Coordinate System Setup
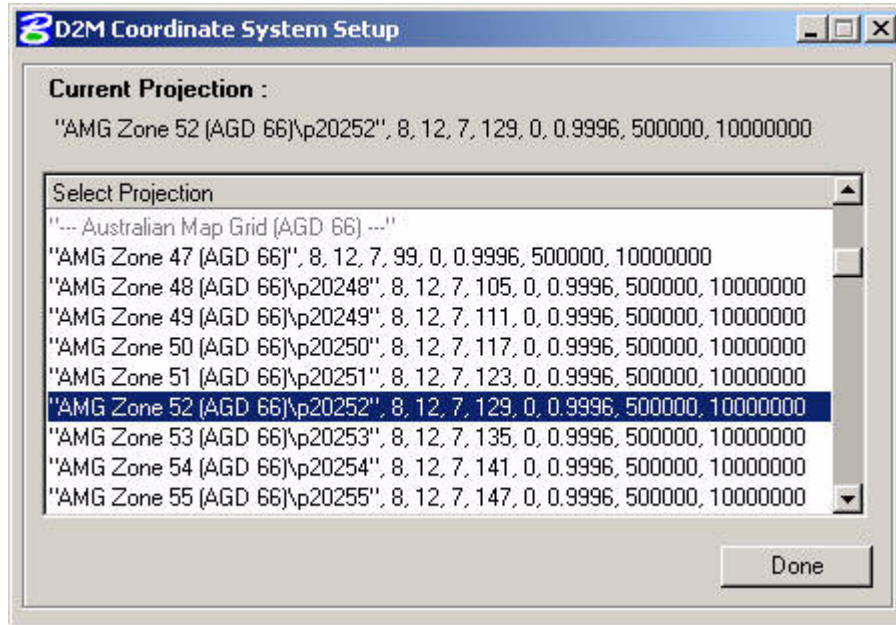
Once this menu is displayed, it lists all the coordinate systems available (as defined in the previously defined projection file), or a NonEarth projection is used (default). Each "run" may have different projection selected. **D2M** doesn't convert the data - it only labels translated data as a data defined by a specific coordinate system.

On completion the **Done** button is used to dismiss this menu and return to the**Main Menu.**

Output Files Definition

This menu provides the way of defining output file names.
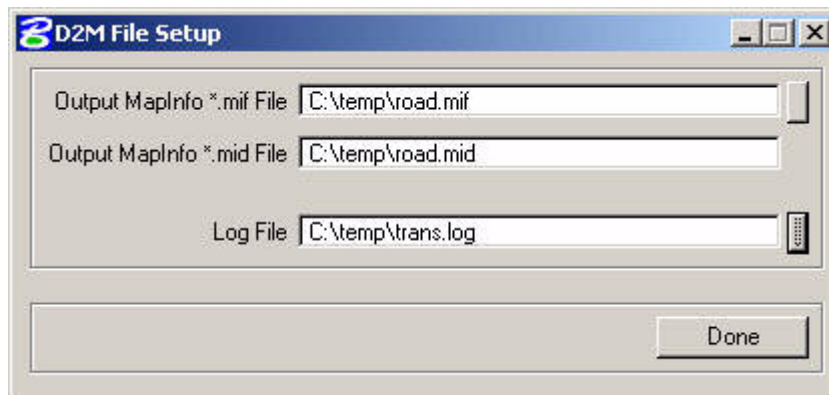
The output MapInfo *.mif and *.mid files – for each run- should be defined here as well as the global log file (common for all runs). The file names can be entered by keying it directly into the fields provided, or selected from the list, which is activated once the user hits small pushbutton on the left side of text entry fields).

On completion, **Done** button is used to dismiss the menu and return to the **Main Menu.**

Attribute Setup

This menu defines the graphical and database translation parameters.
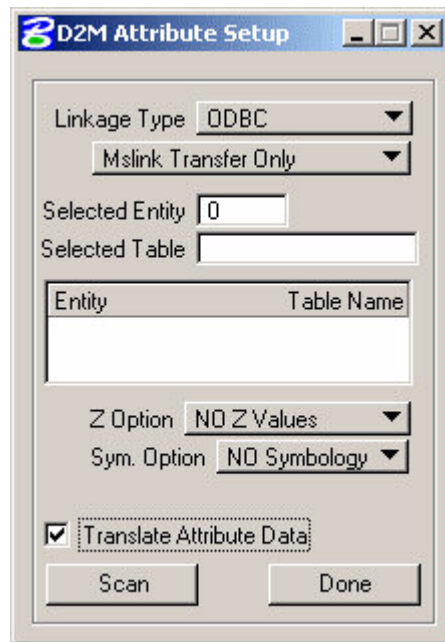
The Attribute Setup Menu provides a set of tools to define attribute translation parameters (N.B. only the selected element types residing on a selected level(s) as defined in a **Selection** menu are considered).

When the attribute (or z value) translation is to take place, the **Translate Attribute Data** toggle **MUST** be turned on.

The **Linkage Type** option button defines type of database linkages to be considered for translation. The **Linkage Type** lists most common database types used with MicroStation – Xbase, Informix, Oracle, Ingres, RIS, DMRS ODBC, and Tag Data. The selected attribute type instructs the scanner to look for this type of linkages **ONLY**. If one element has more then one type of linkage, the application checks and selects required one. Only the very first linkage is translated if multiple linkages are attached to an element.

The next option button determines to what extent database transfer takes place. When the **Mslink Transfer Only** is selected - only **mslink** values attached to a graphical element are converted into MapInfo. This option is very useful in a situation when no database is present and the user has MicroStation file with the elements that in turn have database linkages. This option becomes enabled when the **Linkage Type** is selected. It may also be used when the specific **mslink** values attached to an element could be used within MapInfo to join it with other attribute data.

Since MapInfo has the ability to directly translate certain databases (e.g. dBase), MicroStation elements (with database linkages) translated into MapInfo via **D2M** can therefore be joined with any existing MapInfo data.

Another option provides **FULL Database Data Transfer**, which means that the complete table structure is created and all information (complete row linked to currently translated element) is transferred from native database to MapInfo. In order for this to take place, the required database **MUST** be present and the MicroStation - Database connection established.

When defining data for transfer, the database table (which is linked to the graphical element) must be selected. To achieve this, two of the text fields and the list box must provide the means of selecting the required table for transfer:

The **Selected Entity** defines integer value for the database table (as specified in **mscatalog** table). This value is also present in the element linkage.

The **Selected Table** represents the database table name corresponding to the **Selected Entity** and is relevant only when the proper MicroStation - native database connection is established.

To establish which entity number (table) is present in the currently displayed MicroStation file, scanning facilities are used. If the **Scan** button is pressed, it scans the design file (selected levels and elements) and reports all unique entity numbers (and table names if possible). Once listed in the list box, these values can be used to determine required database table. The user may then select the required table - which in effect updates **Selected Entity** and **Selected Table** fields.

The **Scan** button is also used to the scan current design file for Tag data if this attribute type was selected - see the notes below.

As an addition to the normal database transfer, the **Z option** provides a means of preserving 3D information in a 2D MapInfo environment.

This option enables the user to transfer Z information from 2D (if defined) and 3D design files.

In some instances, the user may attach Z value to a 2D element range. As the range is

attached to one or both of these ranges. D2M's **Z option** provides the choice of **2D-First Range**, **2D - Second Range** and **2D- Both Ranges**. A **3D- Use Z value** option is provided when the translation of 3D design file takes place. When selected, this option translates average Z value for each specific element. In all cases, the Z information is treated as an additional attribute and as such is added into MapInfo *.mid file. It also means that in order for Z values to be translated, the **Attribute Data** toggle switch must be on.

The **Done** button dismisses this menu and returns the user to the **Main Menu.**

In addition to the database facilities described above, **D2M** gives the user the ability to translate MicroStation **tagged data** as an attribute data. The user can select for translation:

ALL tags defining the selected tag set, or,

One tag from the selected tag set.

On selection of the **tag data** and **Scan** facilities the **D2M Tag Data Setup Menu** is displayed.
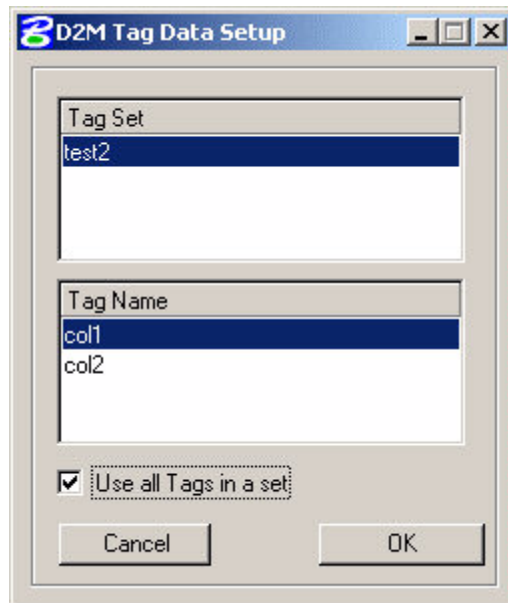

To select the required tag set and **ALL** of the tags from this set, the tag set needs to be selected with the data point – the top listbox and then the toggle use **ALL Tags in a set** needs to be switched on**.** If, on the other hand, only **ONE** tag is required**,** the tag set needs to be selected as well as the required tag from the bottom listbox (with **ALL Tags** toggle **OFF**)

The selections take effect if the **OK** button is used to return to the **Attribute Setup**

MenuIf, on the other hand the Cancel button is used, the most recent (prior to the last selection) selection (if any) is used. On return to the main database menu, if one of the tag options was selected, the selected tag set and tag name (**ALL_TAGS** in case of all tags in a set) is displayed.

Symbology Setup

This menu provides the means of establishing the symbology relations between MicroStation elements and the final appearance of elements in MapInfo.
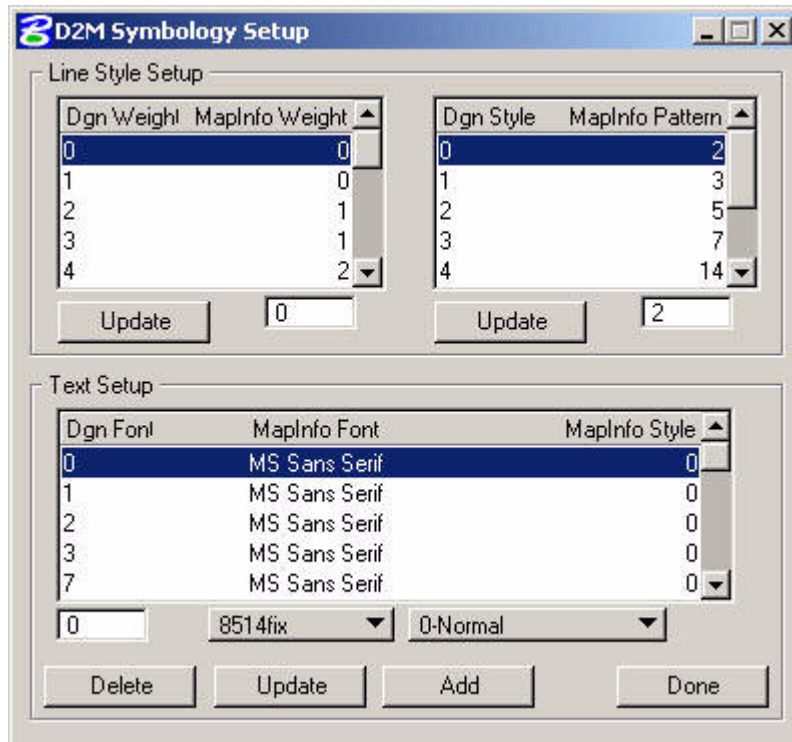
The two top listboxes enable the user to define the relation for the line weight and style. The predefined correlation is displayed, however, the user can change it according to their requirements. In order to change the weight/style, the new value for the highlighted row needs to be entered in the text entry field and the **Update** button selected.

The new values are then automatically displayed in a relevant listbox. The third listbox, enables the user to define the relations between text fonts in MicroStation and MapInfo. This menu provides the means of not only updating the existing values, but also deleting and adding new font definitions.

The left hand side text entry field corresponds to the MicroStation font number. The middle option button lists the MapInfo fonts, the right hand side specifies the MapInfo text font style.

In order to update text font definition, the row which needs updating must be selected (highlighted), new values entered, and finally the **Update** button selected.

Adding a new text font relation is similar to updating, however since a new row is going to be inserted, no existing row needs to be selected (if the existing row is highlighted - selected, it is ignored).

Selection Menu

The selection menu defines MicroStation elements for processing.
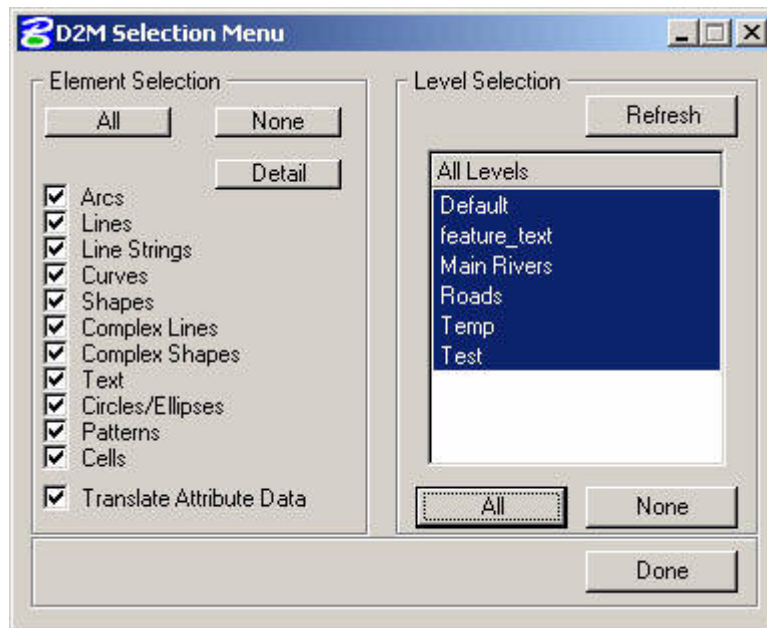
The toggle buttons on the left hand side defines graphical elements which will be processed if found in the design file. The two buttons **All** and **None** help the user to select or deselect all elements. The element types can be selected/deselected individually by simply switching the toggle buttons on/off. The attribute toggle turns on/off any attribute (Z value) translation. Level selection is performed in a similar manner. The user can individually select the levels for processing or select them **All** (or deselect them by **None**). The **Refresh** button is provided to update level list, in case some level changes took place during the time when d2m was active.

The additional **Detail** button may be used to invoke another menu for some miscellaneous definitions (mostly for cell translation).

Detail Setup Menu
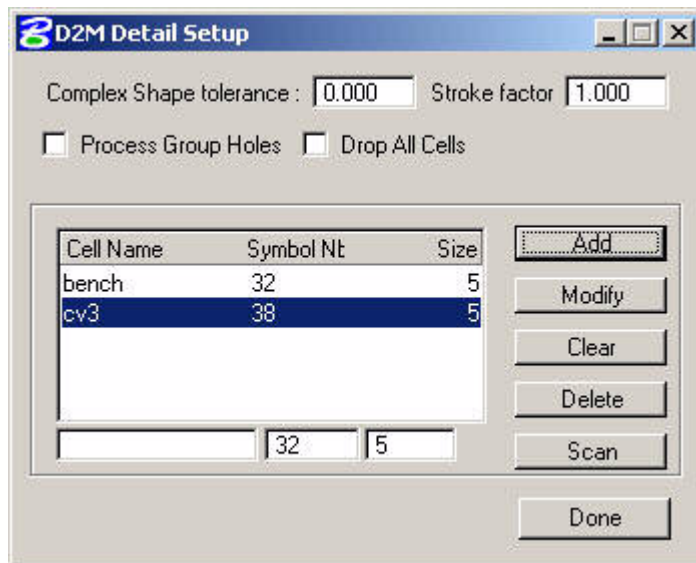
As an additional step in translation of complex shapes, **D2M** lets the user to specify **Complex Shape Tolerance** which (when greater then 0.0) is used to define minimum distance between complex shape adjacent component vertices. If the distance between adjoining vertices is less than the tolerance value set, **D2M** weeds out one of the (second) vertices.

The other parameter available, is the **Stroke factor**. Since some of the MicroStation elements do not have exact representation by MapInfo elements, **D2M** needs to stroke them. The stroking tolerance is individually selected for each element based on element ranges. If the user wants to increase/decrease it, the stroke factor needs to be increased/decreased accordingly. The Stroke factor is just used as a multiplier to internally defined stroke tolerance. This parameter is very rarely used, and the user doesn't really be concerned with it - the default value 1.0 should be used in vast majority.

The Detail Setup menu also provides the ways of translating MicroStation cells into MapInfo symbols or processing the cell components.

There are three options available for cell processing, depending on the **Process Group Cells** and **Drop All Cells** switches. If these two switches are off, **D2M** associates the cell(s) with a symbol.

This approach offers many advantages such as time saving during the translation process, MapInfo data size reduction, but most significantly, **ONE** MicroStation element (cell) is represented by **ONE** MapInfo element (symbol). If exact cell representation is required, the user can create relevant symbols in MapInfo, and then associate this symbol with the cells translated.

The default **D2M** setup uses the set of MapInfo default symbol numbers which (the symbols) are supplied with each MapInfo installation. (Please review MapInfo documentation to see what is represented by a specific symbol).

When a specific MicroStation cell doesn't have any MapInfo symbol allocated, symbol 32 is used as the default. This menu is like a lookup table where **D2M** finds which MapInfo symbol number needs to be used to represent a specific MicroStation cell as well as what scaling needs to be applied to each symbol.

In order to **Add** a new line of definition, the cell name, symbol number and symbol size must be keyed in the fields provided (in the bottom of listbox) and the **Add** button selected.

To Modify any of the rows of data, the required row must be selected, new values entered into text entry fields and **Modify** button selected.

The **Clear** button clears all records (of cell/symbol relations) from this list.

The **Delete** button deletes one (selected) row of data from the listbox.

To help the user in finding the cell names, the **Scan** option scans current design files for cells and then adds (if not present) them to the list. If the cell name is already listed, the **Scan** will not declare this cell. It is important to remember that ONLY the levels specified in a previous menu (**Selection Menu**) are scanned when searching for cells. Once the cells are displayed (on the list), the user can modify the MapInfo final Symbol number and size for each cell.

The **Process Group Cells** toggle provides the means of translating the MicroStation Group Holes into MapInfo regions. If this toggle is on, **D2M** will process all the Group Cells found, however the other cell will be processed accordingly to **Drop All Cells** toggle. If the **Process Group Cells** toggle is on, and the **Drop All Cells** toggle is off, all the group cells will be converted into the MapInfo regions and the other cells will be translated into MapInfo Symbols as described above. On the other hand if the **Process Group Cells** is on and the **Drop All Cells** is on as well, the group cells will be converted to regions and the other cells will have their components processed. If **Drop All Cells** is switched on and **Process Group Cells** is off, all the cells components will be processed.

The **Done** button dismisses this menu and returns the user to the **Main Menu.**

Data Processing

Once the required data definition is accomplished, the user needs to change the mode from **Definition** to **Processing**. This action disables some of the buttons and enables others.

When this mode is active the required "sequences" for processing can be chosen for processing (by selecting them with a data point). The user can use **None** and **All** buttons in order to deselect/select all listed "runs".
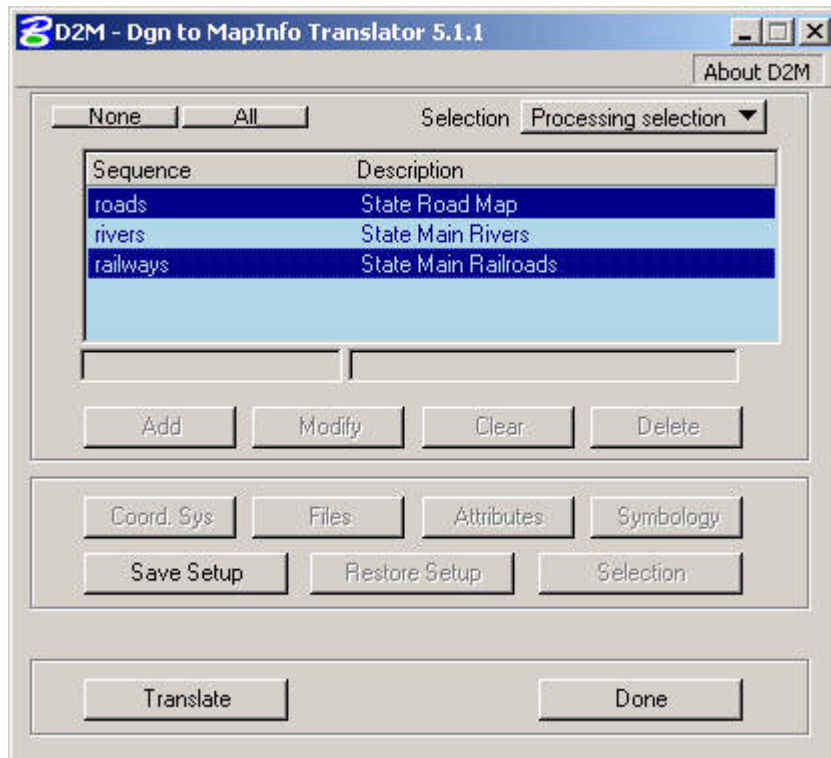

Main Menu example - **Processing Mode**. Please note that two out of three "runs" are selected for processing.

Translation - In order to translate the selected data, the user needs to select **Translate** button. This invokes the translation process for each of the "runs" .

Done - This button exits the **D2M** MDL application. All current setups are lost unless **Save Setup** was used prior to exit.

Save Setup
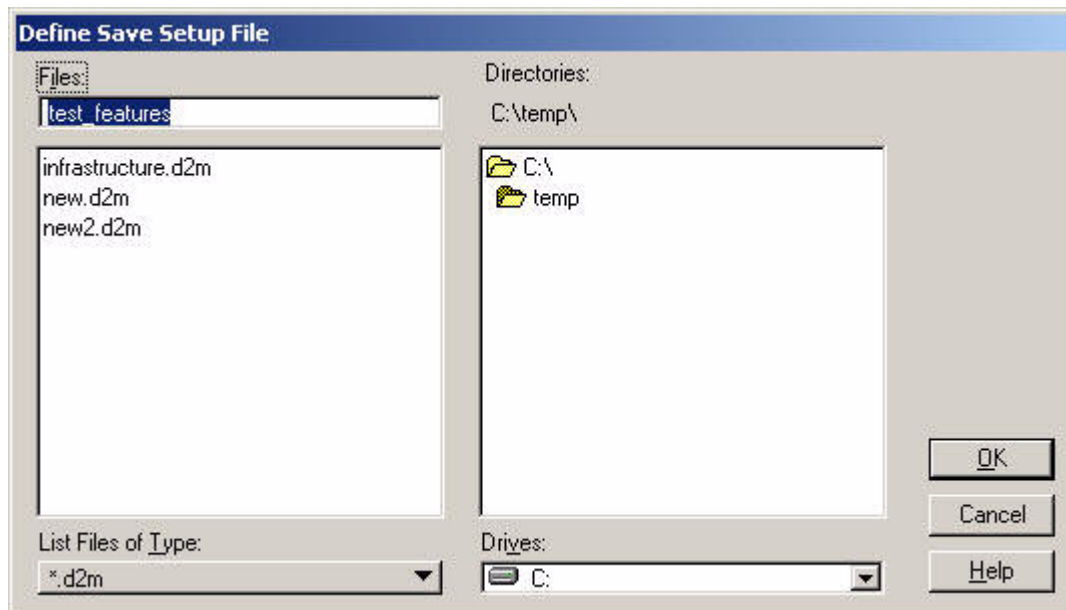
Save Setup - After selecting this option, the standard MicroStation New File Menu appears to assist the user in selecting the file name. The default suffix for save file is *.**D2M**. The *.D2M files enable the user to save all definitions into the file for all runs currently defined. This procedure may include defining the whole series of "sequences" and later restoring them and selecting only some for final processing.

Restore Setup
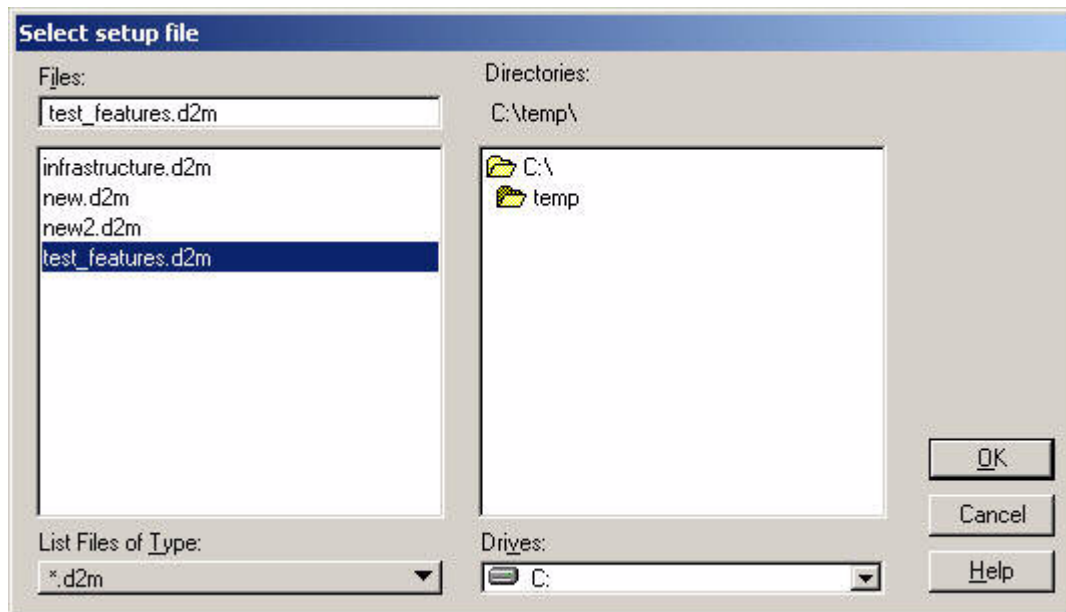
Restore Setup - Reverse to **Save Setup** - after selection, the user can select previously created file. Once accepted, this file is read by **D2M** and previously saved definition(s) are recovered.

Batch Processing

On some occasions – especially when multiple files are to be processed- it is important to automate the translation process. Defining a specific setup file and then applying run definitions to the processed data could achieve this automation. To run **D2M** in a batch mode following steps need to be taken :

Environment name **PATH** needs to be edited to include MicroStation full path directory – in Win95/98 autoexec.bat needs to be edited, in WinNT the **PATH** variable needs to be edited via Control Panel->System->Environment menu.

Create **D2M** setup file in **D2M** (Save option) must be created.

.Ascii batch file needs to be created using one of the text editors (i.e. Notepad or PFE32).

The file must have the following format - as in the example below :

msbatch D2M -fd:\dgn\D2M_batch.dgn -pd:\D2M\D2M_batch.D2M -Sodbc -dx_demo

where :

-f<dgn file name> - dgn file to be processed

-p<setup file> - **D2M** setup file to be used

-S<server type> - database server to be used (optional)

-d<database name> - database name (optional)

-S and -d must both be specified if database (full database transfer) are to be used.

User may have many lines of the same structure in one batch file. It is recommended that the log file be specified in the **D2M** setup.

The final *.mif and mid file names are modified to reflect input dgn name and original mif and mid names (they are combined : dgnName_mifName.mif and so on). The log file name is altered in a similar fashion.

Online Help

Once Help->Help command is selected from the main menu, the online d2m help is displayed.

How to contact us

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