

M2D – Mapinfo to MicroStation Translator

User Guide

Introduction	1
Installation	2
Running M2D	3
Menus	4
Main Menu	5
Files	6
Attribute Setup	7
Symbology Setup	8
Selection Menu	9
Cell Setup Menu	10
Data Processing	11
Save Setup	12
Restore Setup	13
Online Help	14
About M2D	15
How to contact us	16

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Introduction

MapInfo to MicroStation Translator (**M2D**) provides the user with a tool to translate MapInfo .mif files into MicroStation design files. The translator also supports the translation of attribute information from MapInfo *.mid files.

M2D enables the user to separate the data residing in a *.mif file , based on element criteria.

M2D provides the ability to define, store and retrieve user defined setups - individual set-ups may be established for different *.mif and *.mid files.

M2D maintains MapInfo symbology (colour, weight, style) as well as font definitions. The corresponding (as close as possible) MicroStation values are provided- however the user can modify the symbology as required.

M2D preserves the integrity of MapInfo symbols by replacing them with MicroStation cells.

M2D provides the user with capabilities for translating database information associated with processed MapInfo elements.

Installation

The software is normally downloaded from our web site or E-mailed by Lilac Crest. To load the software, copy MDL routine m2d.ma and lcrest.dll into the MicroStation subdirectory defined by the MS_MDL MicroStation environment variable. Please make sure that m2d.ma file is write enabled. In addition m2d online help file m2d.chm needs to be copied into your nominated help directory, which should be included in the paths defined by MS_HELPPATH MicroStation environment variable.

Menus

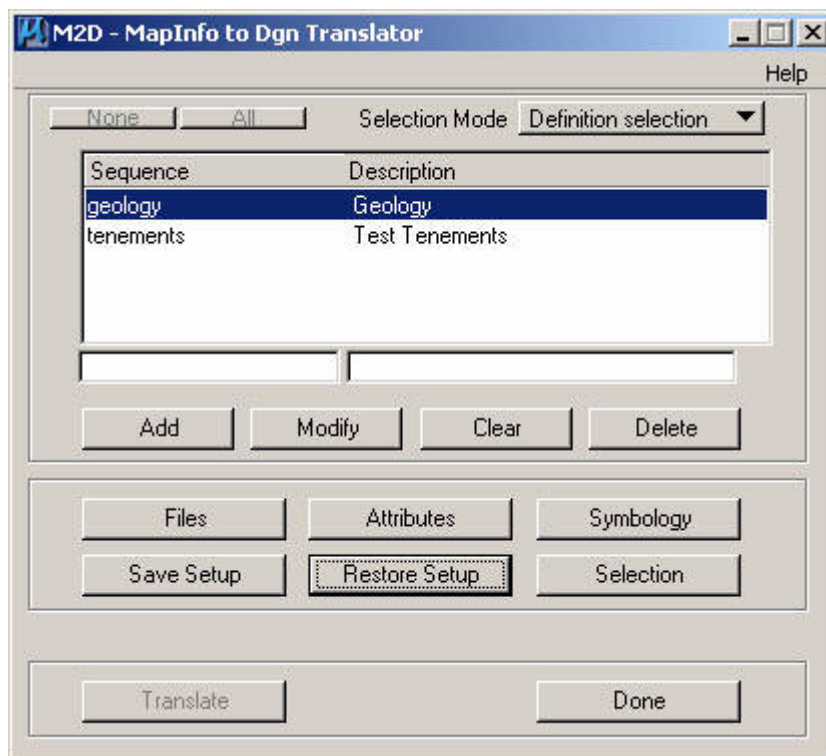
M2D uses main menu as the central dispatch point. which provides access to all of the other functions and submenus within **M2D**.

M2D 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.

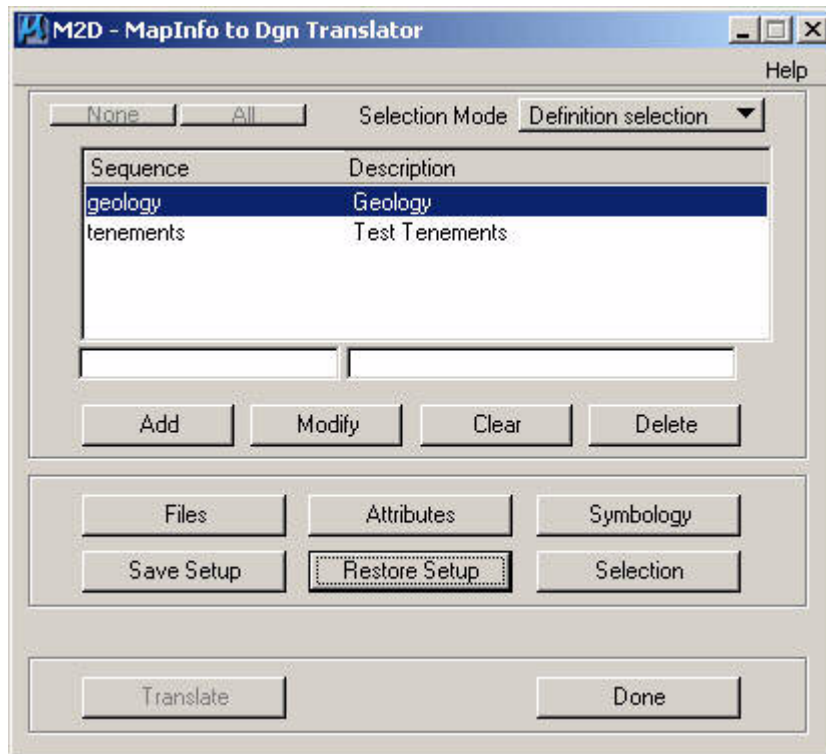


The above menu shows an example of mentioned two-mode approach.

For example, the user can define geology, and tenements "sequences", however, for the final processing only geology will 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 about to take 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 **M2D**.

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 **M2D** to exit).

The following buttons invoke other submenus:

Files- to define input MapInfo *.mif and *.mid files (one pair for each sequence), output design file (or blank for the current one), **One** log file for all processed sequences.

Attributes- to define database translation parameters.

Symbology- to define and match as close as possible corresponding MicroStation - MapInfo symbology (colours, fonts, styles etc.)

Save Setup- to save the current definitions into a setup file (note that All current sequences are stored).

Restore Setup- to restore previously stored definitions.

Selection- to select elements and define the output level for each specific "sequence".

The remaining two buttons provide the means of translating and exiting application (without invoking any other menu) :

Translate- Invokes translation process - **allselected** "sequences" are translated one at the time. After completing each sequence, the appropriate message defining the number of elements selected and successfully translated is displayed on the menu. If the log file was defined, more information regarding the processing may be found in this file. At the same time, any error condition is reported in the file.

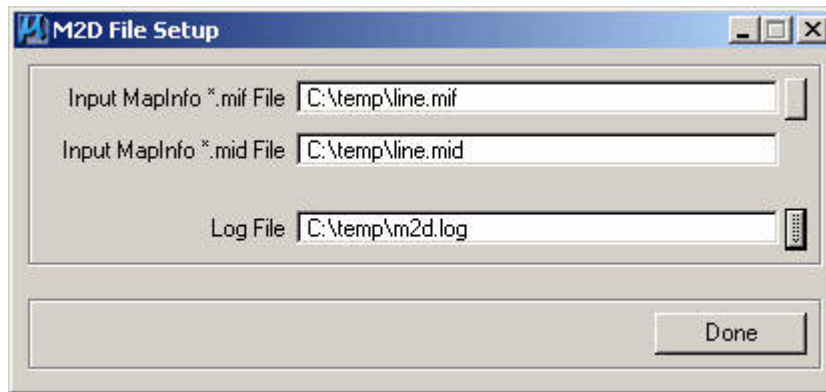
Done- Exits M2D by offloading M2D from MicroStation.


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.


Files



This menu provides the way of defining output file names.



The input 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 right side of text entry fields).

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

Attribute Setup



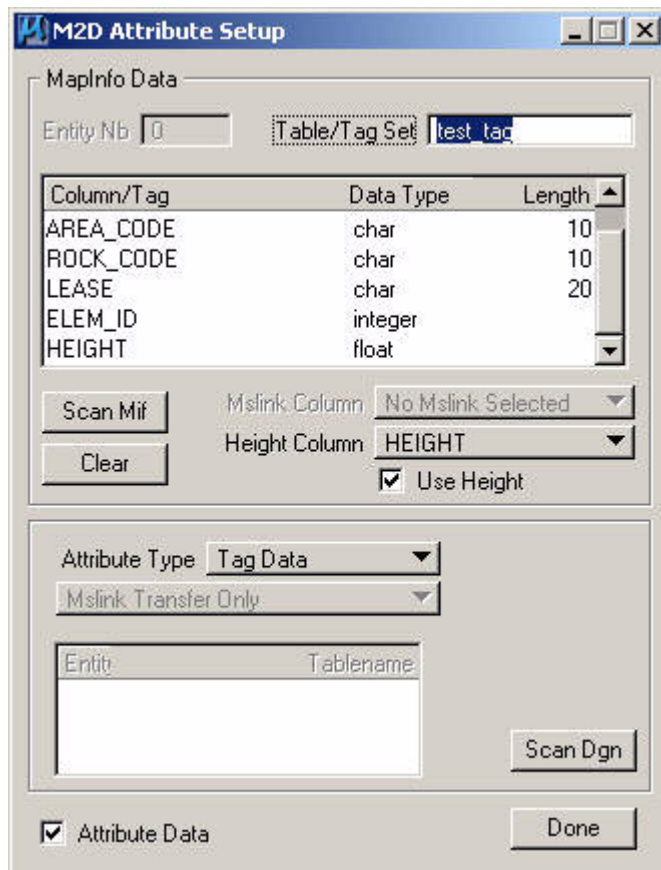
The Attribute Setup menu defines attribute type and the way the attributes are translated. Two main attribute types are supported : **MicroStation Tag** data and MicroStation supported **database attributes**. The main difference between these is in the output attribute location. The MicroStation Tag data is stored directly in the design file. On the other hand, when the Database type is used, the attribute data is used to populate external database and attach linkages to the graphical elements pointing to specific tables and records in the external database – the only exception being when only mslink transfer takes place. In that case the linkages are created without populating external database.

When the database option is used, MicroStation uses combination of two numbers attached to graphical element to identify relevant record in the database. These two numbers are **entitynum** – which is a unique number associated with each database table, and **mslink** – the number - which should be unique for each record/row within a table.

Each of the database table which is linked to graphical element must have column called mslink. At the same time the unique number corresponding to this table must be defined in mscatalog table.

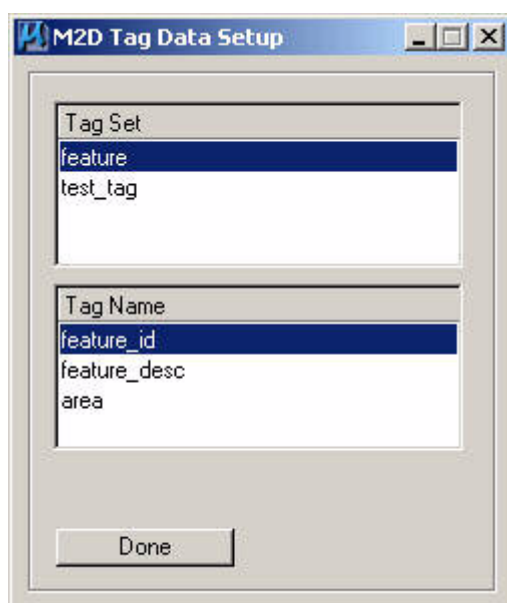
To view attribute structure, Scan Mif button should be used – it is assumed that the input mif and mid file are already defined.

By selecting Attribute Type to **Tag Data**, M2D will convert MapInfo attribute data into MicroStation tag set – if the tag set doesn't exist, it is created during the translation. As the input, Tag Set must be keyed in by the user (test_tag in this example). The tag set doesn't need to exist at this stage, since it will be created if required.



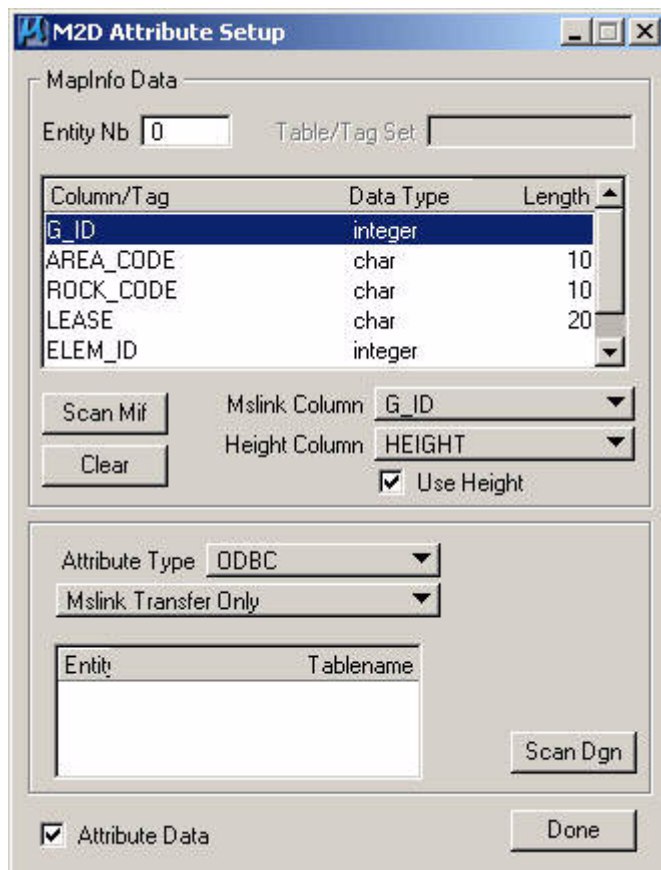
In the example above, the **Use Height** toggle was selected and the **Height Column** was set to column name HEIGHT – which means that during translation process, the value set for height column will be used as a Z value for corresponding graphical element.

The **Scan Dgn** button operates differently, depending how the **Attribute Type** is set - whether it is toggled on to Tag Data or not. When the Tag Data is selected, this action displays menu showing existing Tag Sets and Tags – see below.



The example below illustrates the case when mslink conversion takes place, without populating database. As a matter of fact, the database doesn't even need to be connected, since all the operations are internal to MicroStation.

The user needs to click **Scan Mif** button to populate Column/Tag information and then define entity number (which should match database entitynum value for corresponding table if database is to be connected). In addition one of the columns needs to be defined as an "mslink" column – i.e. the integer values from this column will be used as the element mslink values as described above. When the dgn file contains some elements with database linkage, the user can check the entitynum range by clicking **Scan Dgn** button. It is also important that the proper attribute type (linkage type) is selected – in the example below ODBC link type is used.



The next example illustrates full database transfer. This options requires (in addition to the requirements for the previous example) that the database is connected and the specified table corresponds to the database table – the only exception is that the database table must have mslink column, whereas here, the column defined as an mslink column is directly mapped to database mslink column.

In addition one of the following actions must be selected to decide how to populate selected table:

Append Dbs Record- to add new record to the table without checking if the same mslink is already used.

Add/Replace Dbs Record to add new record to the table – if there is a record having this specific mslink, all the values for this record will be updated.

Add/Use Existing Dbs Record- to add new record to the table only when the specific mslink is not found.

Please note that the last two options may slow the translation considerably, since every record translated needs to be checked against database mslink values.

MapInfo Data

Entity Nb Table/Tag Set

Column/Tag	Data Type	Length
G_ID	integer	
AREA_CODE	char	10
ROCK_CODE	char	10
LEASE	char	20
ELEM_ID	integer	

Mslink Column Height Column
 Use Height

Attribute Type Append Dbs Record

Entity	Tablename
2000	rock

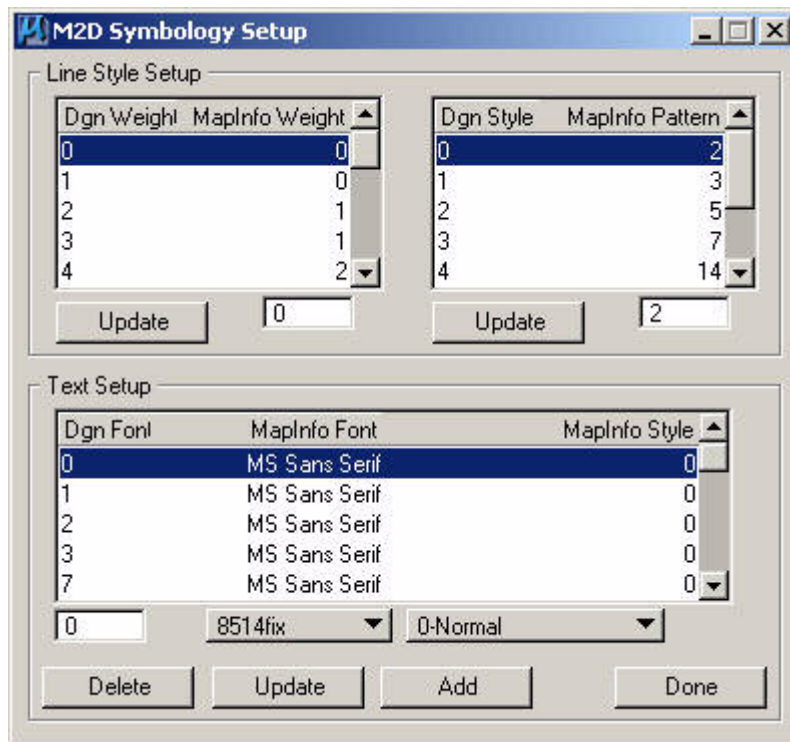
Attribute Data Found 1/1 linkages

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

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 the requirements. In order to change 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 list box, 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.

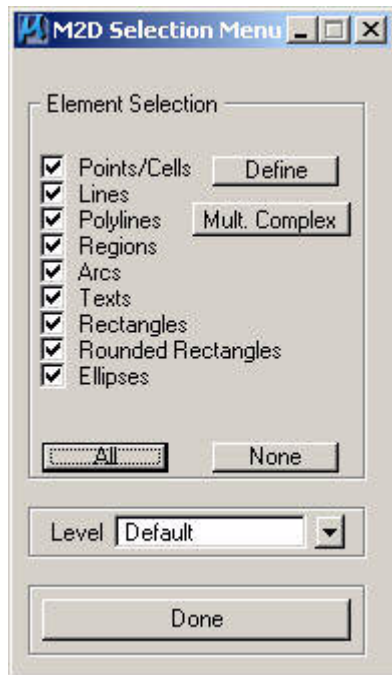
The left hand side text entry field corresponds to MicroStation font number. The middle option button lists MapInfo fonts, the right hand one specifies the MapInfo text font style. In order to update text font definition, the row which needs updating must be selected (highlighted), new values entered, 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




This menu defines the MapInfo elements to be translated.

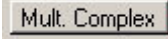


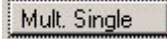
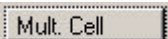
The toggle button on the left hand side define the graphical elements which will be processed if found in the *.mif file. Two buttons **All**  and **None**  help the user to select or deselect all elements. These elements may be selected/deselected individually by switching the toggle buttons on/off.

The placement level (in MicroStation file) is defined by selecting any level from the currently defined MicroStation levels in a "**Level**" combo box. In some circumstances, user selected level may not exists (e.g. when using *.m2d saved file with already defined level name). When this specific situation occurs, new level (name) is added to the current MicroStation file.

In order to precisely define the relation between MapInfo symbol and MicroStation cell, the user needs to select "**Define**"  next to the Point/Cells toggle switch - this will invoke another menu, which is described below.

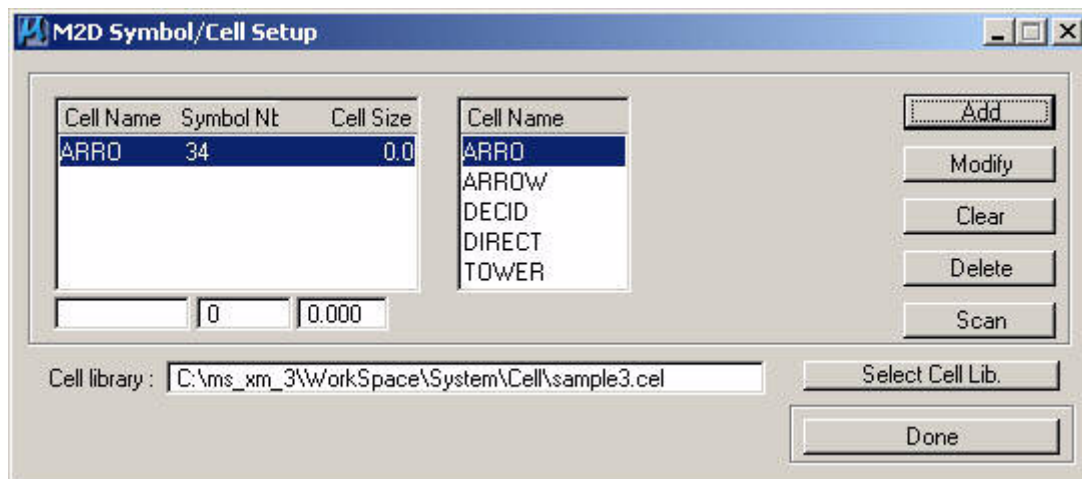
When Multi Polyline are used in MapInfo *.mif files, the user has the choice in defining what kind of MicroStation elements is to be created. The default value is

"Mult Complex"  which means that the MicroStation Complex Line String will be created.

The other choices are "Mult Single"  - to create each of the Polylines as the separate element and "Mult Cell"  to create it as a cell. This approach makes the translation much more flexible, especially, if the initial MapInfo Mult Polyline were created by a specific MapInfo software.

Cell Setup Menu

The Cell Setup menu provides the ways of associating MapInfo symbols with MicroStation cells.



The Symbol/Cell Setup menu helps the user to associate MapInfo symbol number with a specific MicroStation cell. If no such definition exists, M2D will use point element instead.

The **Scan** button scans selected *.mif file for symbol. Any symbol found is reported in the displayed list box (left hand side list box). The user can then define corresponding MicroStation cell from the current cell library - by clicking the cell name. If for any reason, the cell library is not available, the user can directly key in cell name and then use **Modify** button.

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

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

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.

When required cell resides in any other cell library, the user can attach it by selecting the **Select Cell Lib.** button.

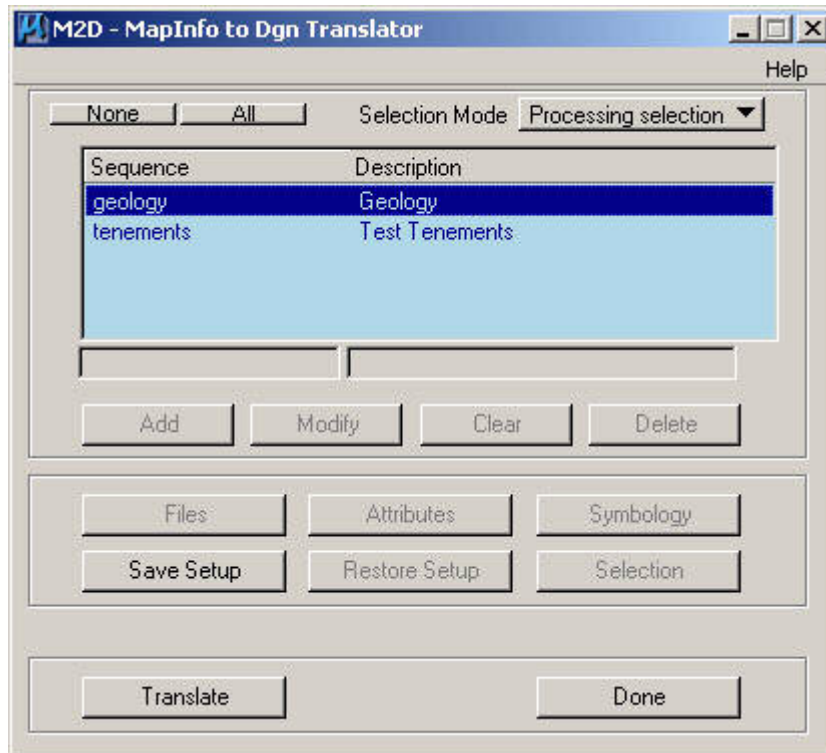
If the specified cell size is 0.0 - the default value from the cell library will be used - no scaling will be used. If on the other hand, the cell size is not 0.0, the scaling factor will be used to make the longer side of the cell to be of size (Master Units) as specified in a list box.

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".

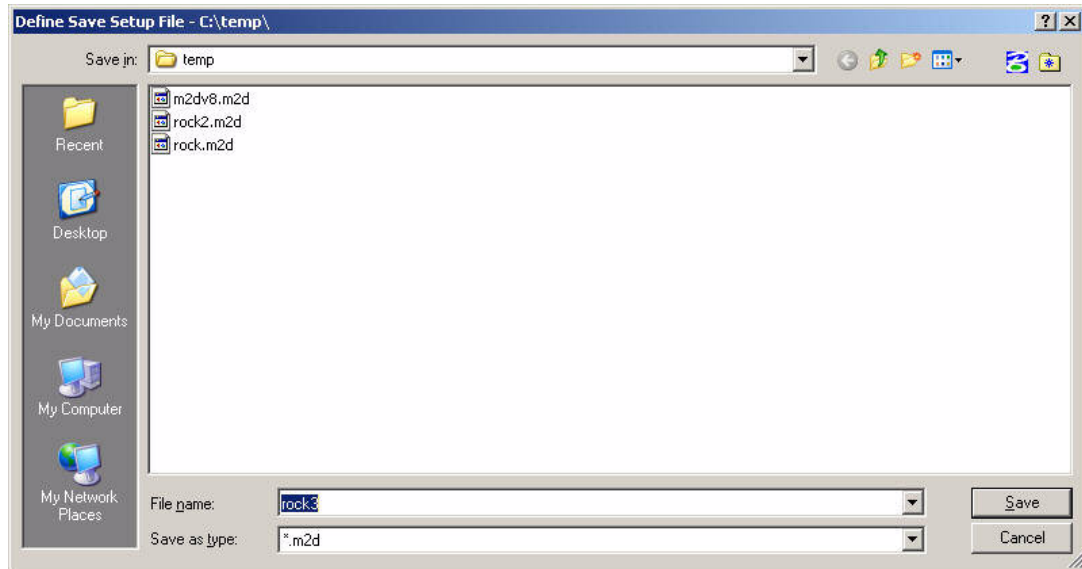


Main Menu example - Processing Mode. Please note that one out of two "runs" is selected for processing.

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".

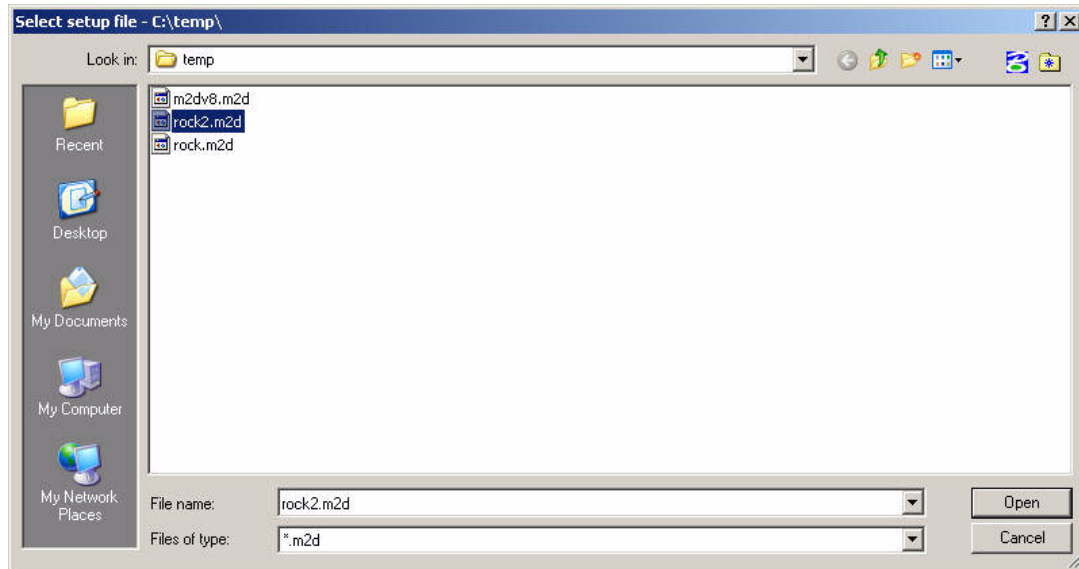
Done - This button exits the **M2D** MDL application. All current setups are lost unless **Save Setup** was used prior to exit.

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 ***.m2d**. The *.m2d 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 **M2D** and previously saved definition(s) are recovered.

Online Help

Once Help->Help command is selected from the main menu, the online m2d help is displayed.

About M2D

The Help->About M2D option provides the way to obtain more product information (e.g. Developer Address contact phone/fax number and E-mail address), it also gives the user the ability to update serial number when required (e.g. changing it from Demo to Full production).

When activated, this command displays the same menu as described at the very beginning of this document.

See Running M2D

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