

Colorado DOT Survey Code Translator User Guide

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Introduction

In order to ease the transition from the old TMOSS system to the new CDOT Survey Coding System that will be used with InRoads, a Translator application was created that translates survey files from TMOSS to the new coding system.

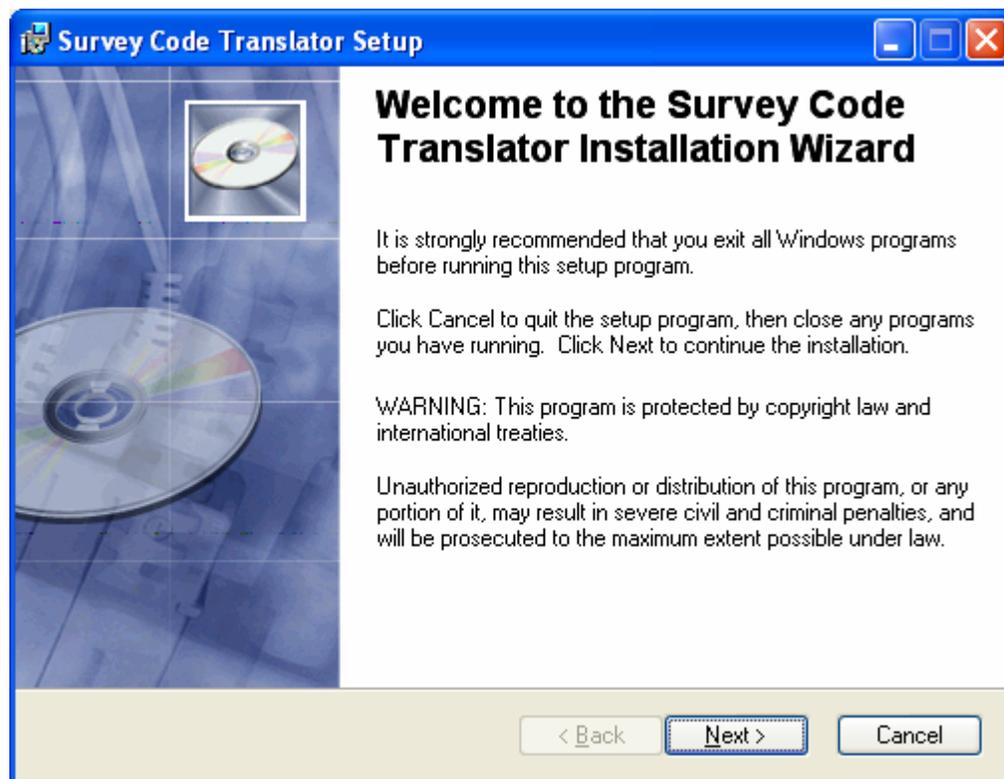
The Translator is easy to use and translates the shots in the .SDR or photogrammetry file into the new coding system. If the shot cannot be translated completely, then warnings are given as to why the shot could not be completely translated and which shot it is so that the problem can be fixed. The problems are caused by the differences between TMOSS and InRoads. InRoads does not have all the capabilities built into the TMOSS system.

Installing the Translator

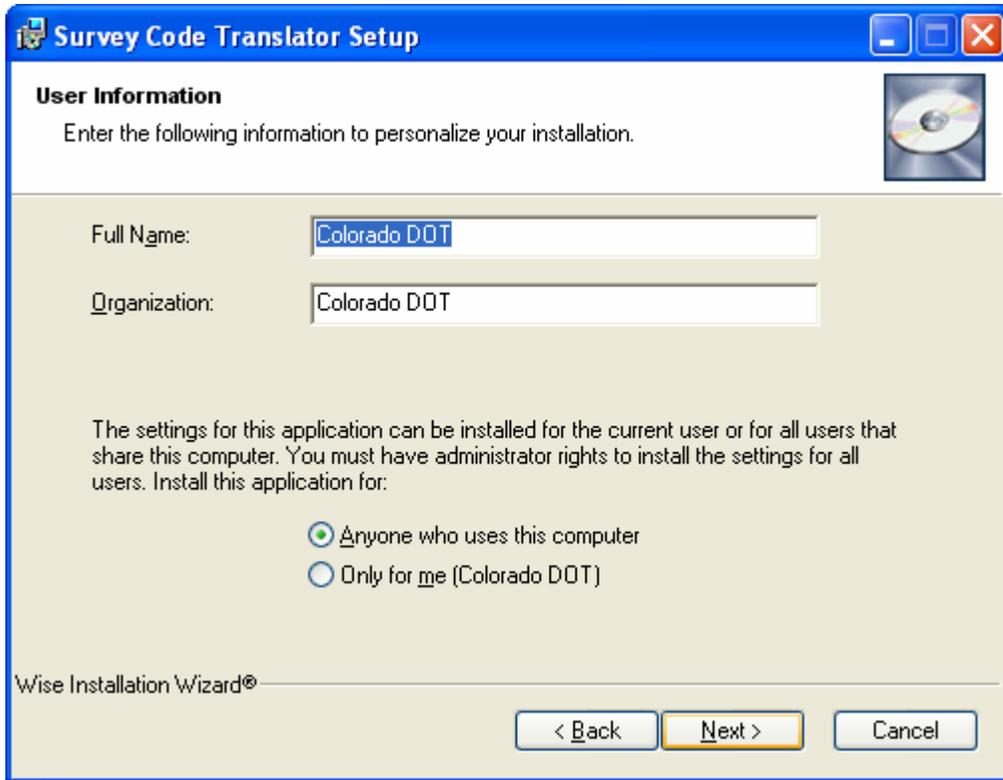
The current version of the Translator is available from the CDOT web site at <http://www.dot.state.co.us/ECSU/Download.asp>

Installation from the CDOT Web Site

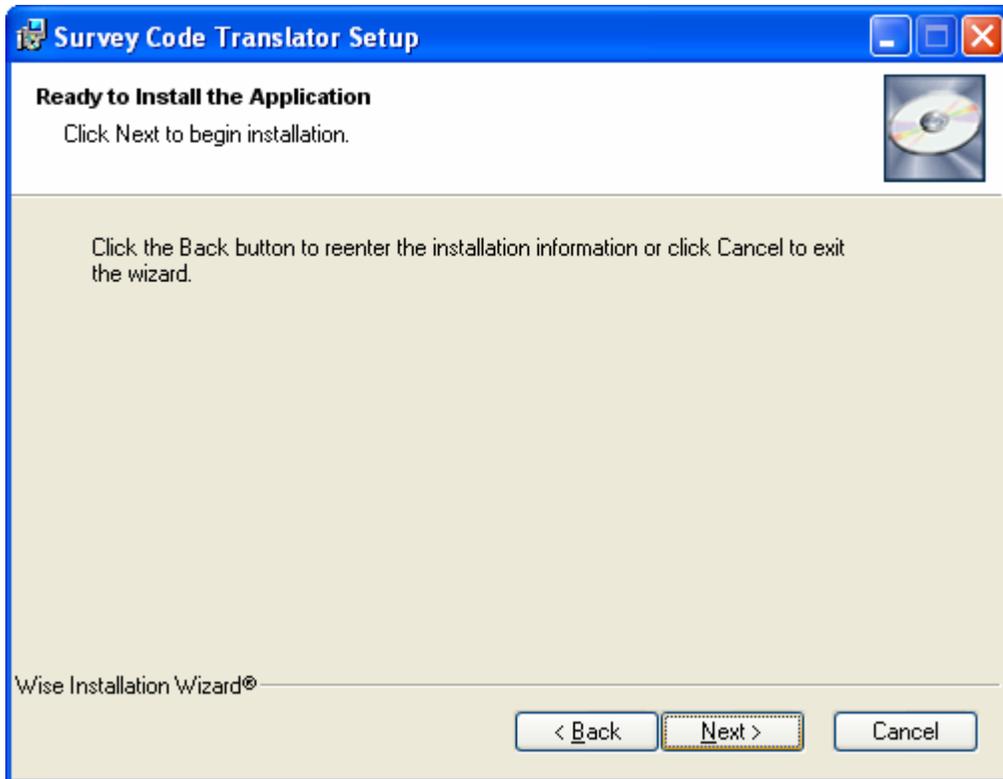
Once you have downloaded the Translator installation file, double click on it and you will see the following on your screen.



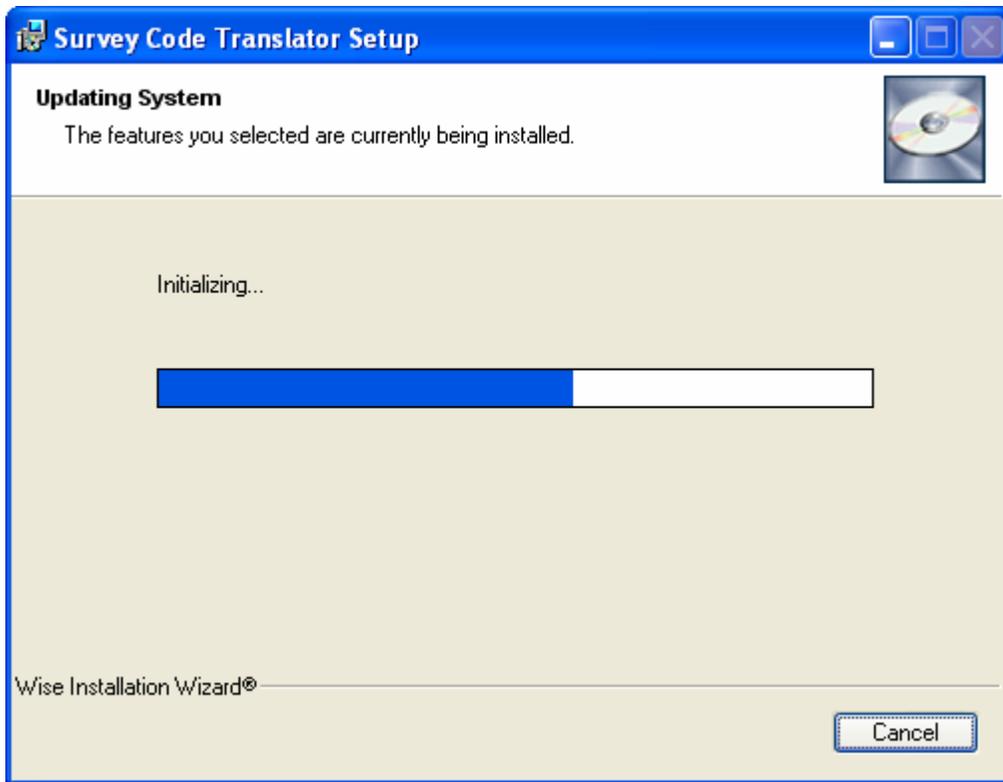
Click on the Next button.



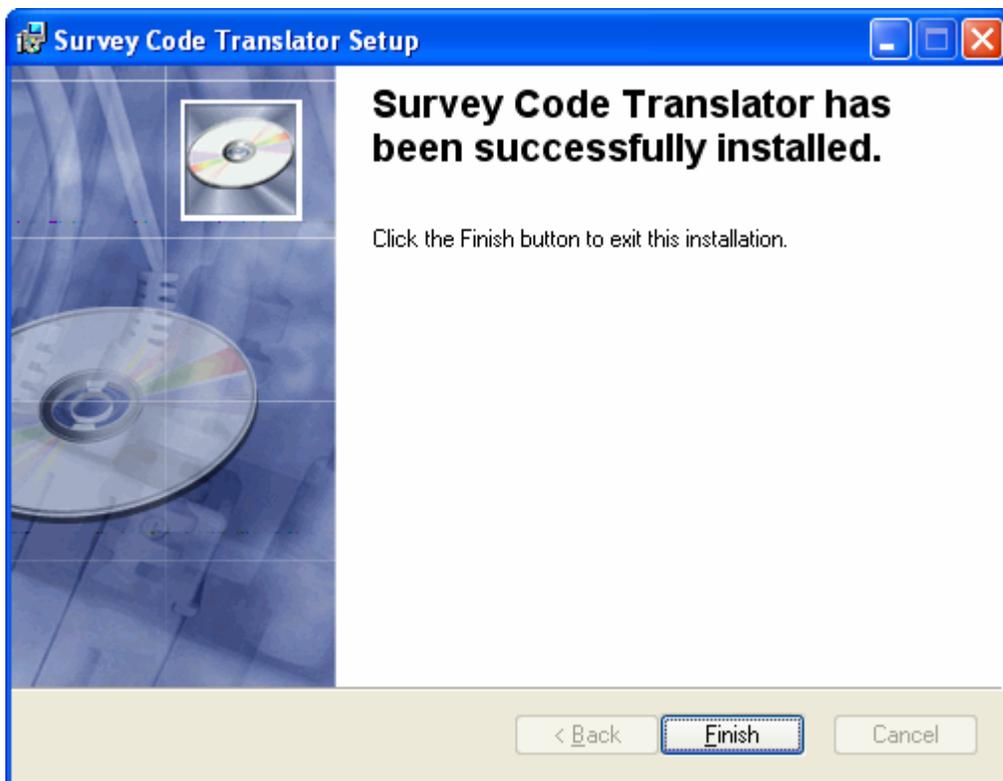
Click on the Next button. Note: the lower part of the window will only be displayed if you have administrative privileges.



Click on the Next button.



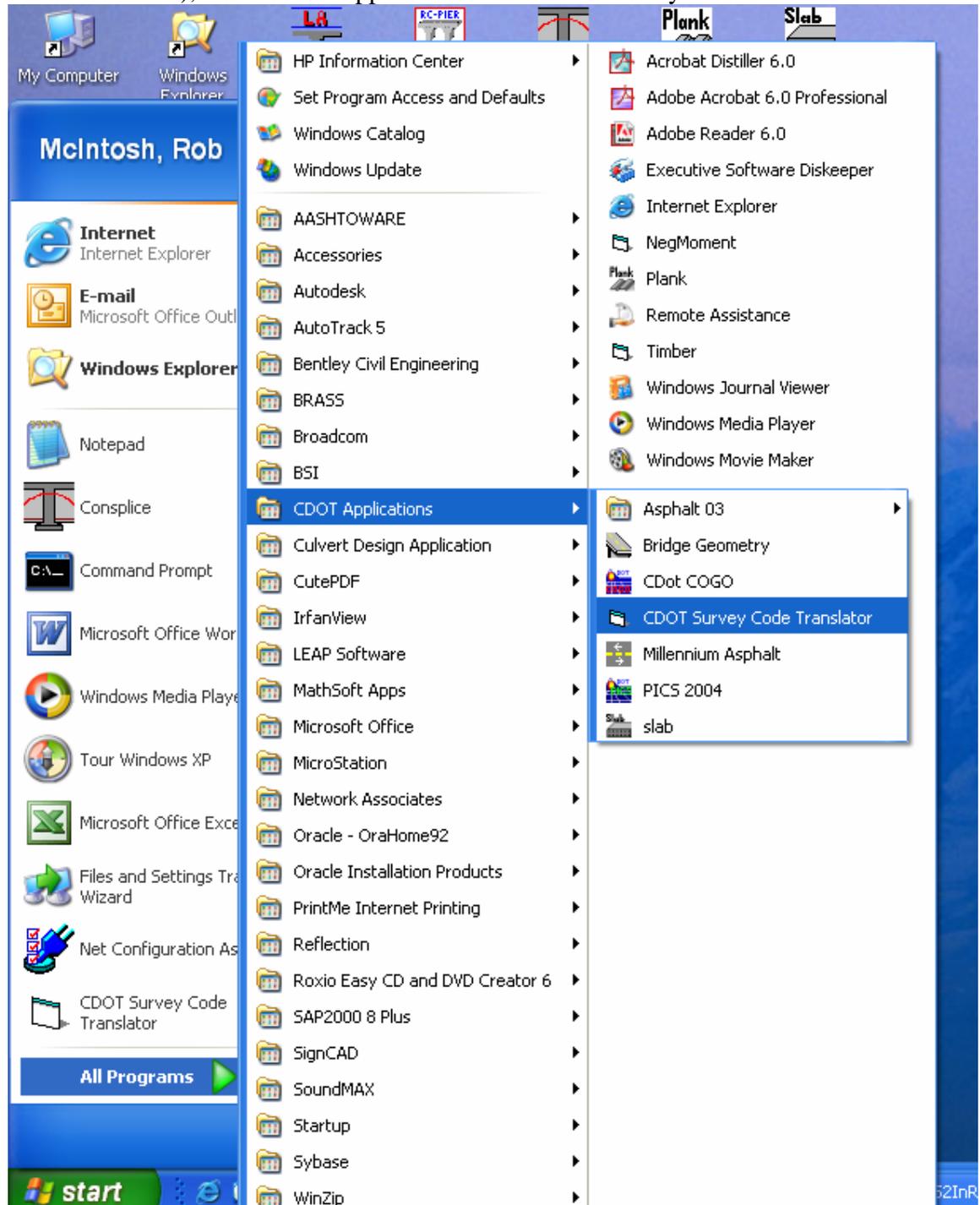
This window requires no action.



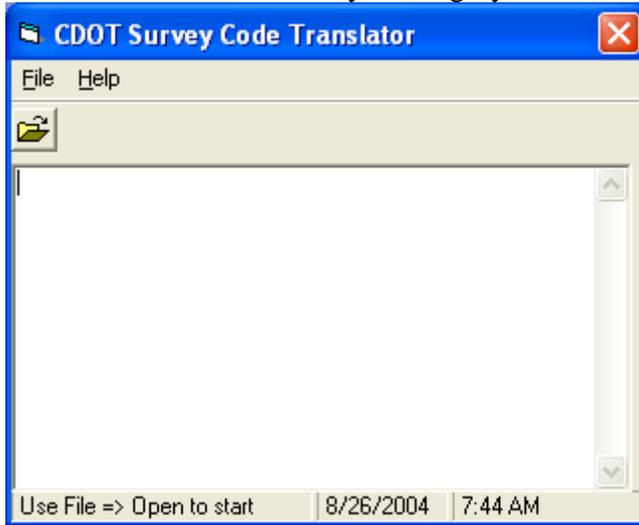
Click on the Finish button.

Using the Translator

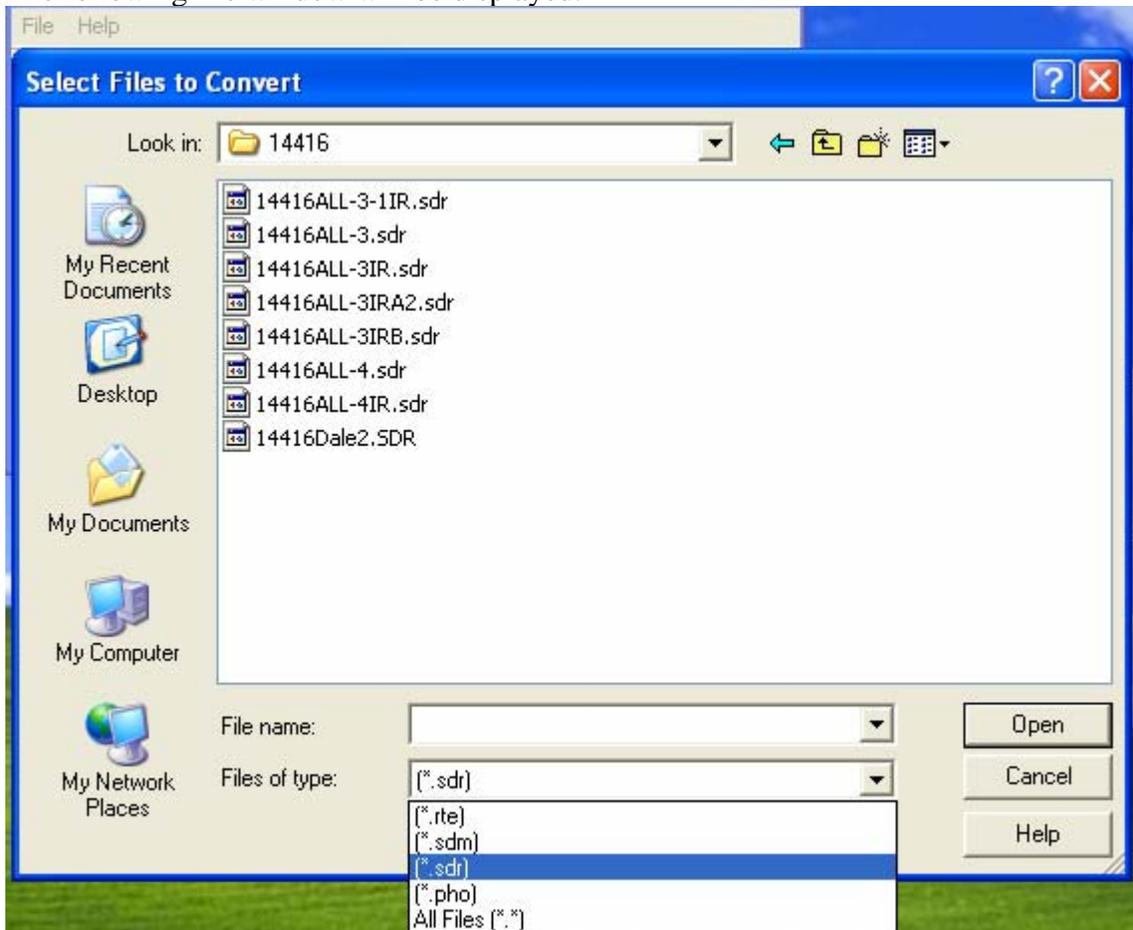
Start the Translator by clicking on the Start button, then Programs (All Programs in Windows XP), then CDOT Applications and CDOT Survey Code Translator.



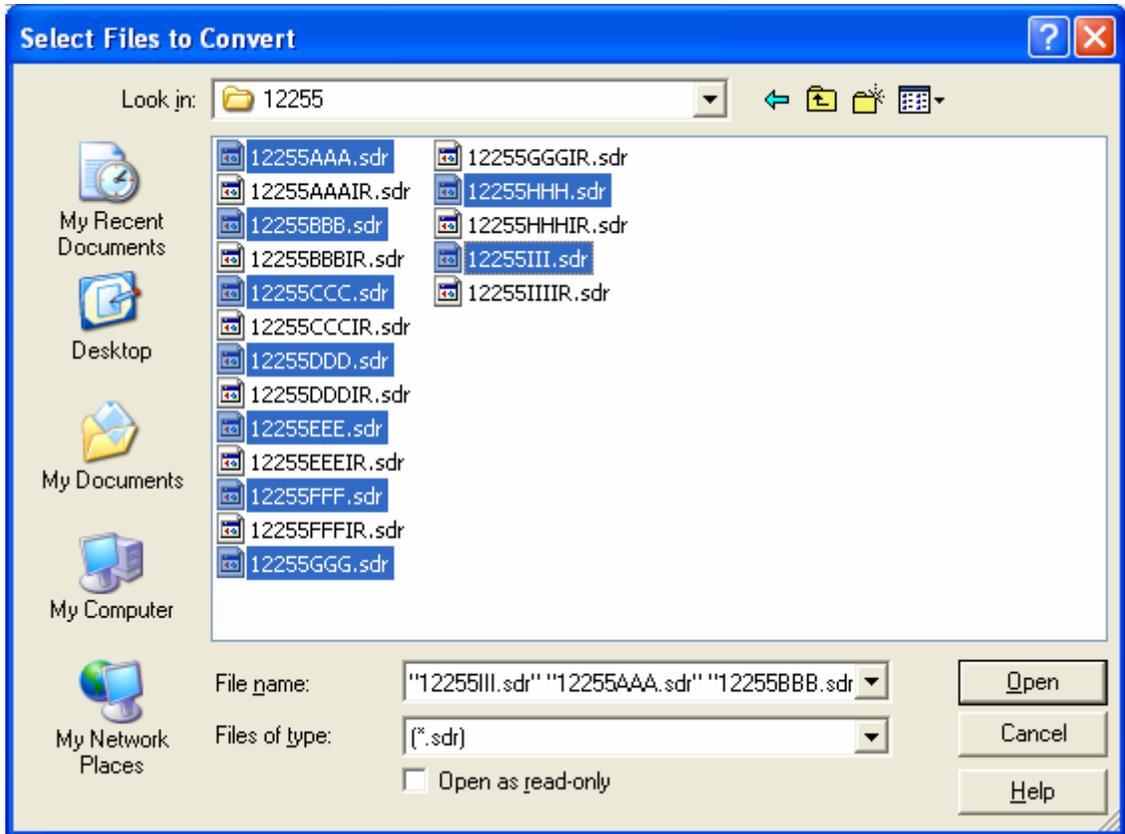
The following is the main window for the Translator. Either click on the Open icon in the toolbar or click on File => Open to start translating a file from TMOSS format to the CDOT Survey Coding System format.



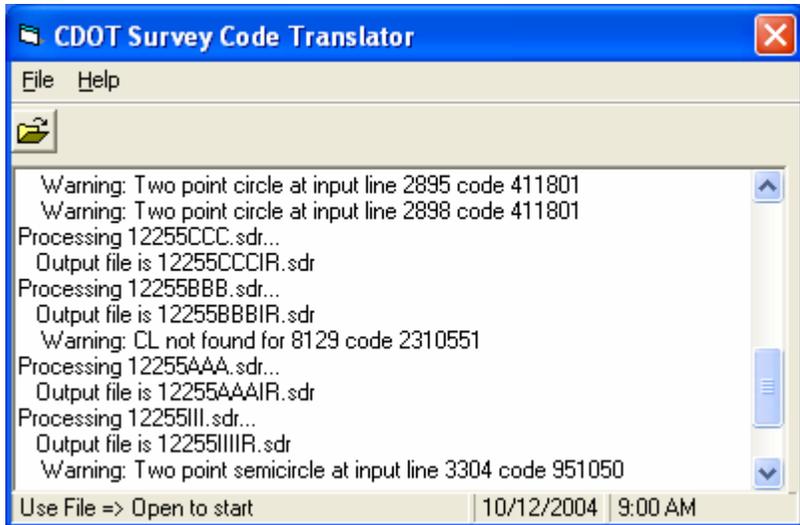
The following file window will be displayed.



Select the type of file you want to convert from the “Files of type:” list.



Select the files you want to translate and click on the Open button. Note that multiple file selection is allowed. Use the Ctrl and Shift keys when you click on the file names for multiple selections. The number of files you can translate at one time is limited by the amount of memory your computer has. Typically, you can translate 2 to 3 large files and about 50 small files.



Information is displayed in the Translator messages area. Translator messages include which files were selected for processing, the name(s) of the translated file(s), and warnings about points that may have problems when read into

InRoads. The output file names are the same as the input file names with “IR” added at the end of the file name. In this example some points have two point circles or semicircles which may cause problems when input in InRoads Survey. These warnings are also contained in the file Translator.log. The Translator.log file will be in the same folder as the input file(s).

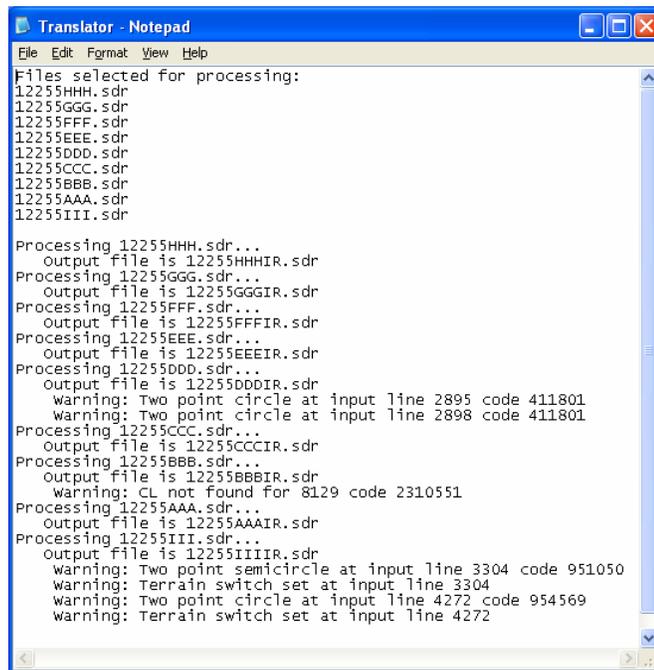
Notes: The log file will be overwritten each time the Translator is run. The message area and log file are limited in the number of warnings that will be displayed (64KB).

Translator Warning messages

The warning messages the Translator reports fall into three categories: terrain warnings, two point circles and semicircles, and closure warnings. The terrain warnings are about terrain settings for the point that will probably cause spikes, valleys, or busts in the terrain model. The two point circles and semicircles may be a problem in InRoads. The closure warnings are about points that are missing a closure.

The warning messages do not indicate that the shots will not be read into InRoads, only that the Translator has detected situations that may affect the terrain model. These situations will probably have to be corrected in order for the terrain model to be accurate.

The following is an example of the Translator warning messages log file (Translator.log).



```
Translator - Notepad
File Edit Format View Help
Files selected for processing:
12255HHH.sdr
12255GGG.sdr
12255FFF.sdr
12255EEE.sdr
12255DDD.sdr
12255CCC.sdr
12255BBB.sdr
12255AAA.sdr
12255III.sdr

Processing 12255HHH.sdr...
  Output file is 12255HHHIR.sdr
Processing 12255GGG.sdr...
  Output file is 12255GGGIR.sdr
Processing 12255FFF.sdr...
  Output file is 12255FFFIR.sdr
Processing 12255EEE.sdr...
  Output file is 12255EEEIR.sdr
Processing 12255DDD.sdr...
  Output file is 12255DDDIR.sdr
  warning: Two point circle at input line 2895 code 411801
  warning: Two point circle at input line 2898 code 411801
Processing 12255CCC.sdr...
  Output file is 12255CCCIIR.sdr
Processing 12255BBB.sdr...
  Output file is 12255BBBIR.sdr
  warning: CL not found for 8129 code 2310551
Processing 12255AAA.sdr...
  Output file is 12255AAAIR.sdr
Processing 12255III.sdr...
  Output file is 12255IIIR.sdr
  warning: Two point semicircle at input line 3304 code 951050
  warning: Terrain switch set at input line 3304
  warning: Two point circle at input line 4272 code 954569
  warning: Terrain switch set at input line 4272
```

Breakline and Non-Breakline Codes File

The TMOSS coding system had default terrain settings for all the point codes. The defaults included: breaklines, non-breaklines, and shots to be excluded from the terrain model. In order to do an accurate translation of the terrain defaults, the Translator uses files that contain all the point codes whose default was a breakline or non-breakline. These point codes are contained in the Breaklines.txt and NonBreakline.txt files located in the installation folder for the Translator. Each line in the file contains an individual point code. The entire file is sorted and MUST remain so for the Translator to work properly. It is highly recommended that you do not modify this file, but if it is necessary to include a breakline or non-breakline point code, you may do so as long as you maintain the sorting order of the file and do not add extra blank lines anywhere in the file including the end of the file.

Differences Between TMOSS and InRoads

The TMOSS point coding had some capabilities that don't exist in InRoads. The primary areas where differences occur are in the terrain settings and the closure of figures.

Terrain settings differences

There are three basic settings for the terrain model; breaklines, non-breaklines, and a point that will be excluded from the terrain model. All points in the TMOSS and Survey Coding System have terrain defaults. In TMOSS the surveyor could change the terrain settings from the default to another by entering a code. A breakline could be changed to a non-breakline, a non-breakline to a breakline, and an excluded point to a non-breakline. One of these is not possible in InRoads. Excluded shots cannot be changed to non-breakline shots. Changing an excluded point to a non-breakline is not possible via the point code or attributes for the point. This can only be done via the InRoads software. The Translator changes a non-breakline to a breakline by using a point code of 7000.

Closure and Linetype Differences

InRoads supports two closure types; closure of a figure, and closure of a rectangle. This means that the following TMOSS closures/linetypes are not possible in InRoads.

- Two Point circle (linetype 5 in TMOSS)

Also, there may be issues with the following linetypes depending on how the original survey was coded. If the 2 point semicircle is not a part of an alignment with tangent lines then there is a high probability that the information will be incorrect in InRoads.

- Clockwise two point semicircle (linetype 3 in TMOSS)
- Counterclockwise two point semicircle (linetype 4 in TMOSS)