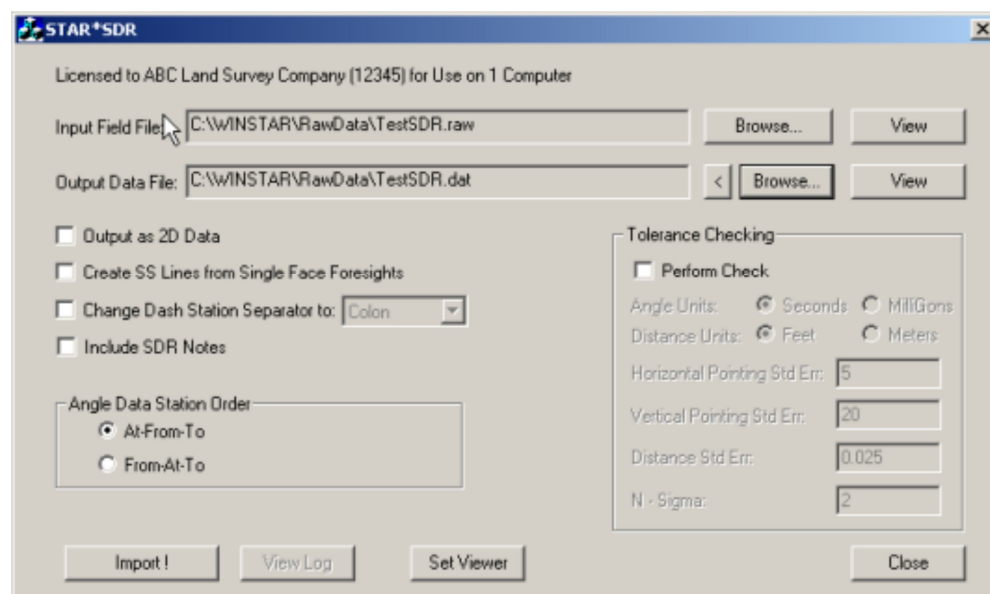


STAR*NET CONVERSION UTILITIES

STAR*SDR CONVERSION UTILITY

STAR*SDR converts SDR raw data collector field files to STAR*NET input data format. The program supports both SDR20 and SDR33 raw file formats.



Running the program is easy. First browse for the raw SDR file to convert, then browse for an output file (a new or existing file), set desired options and press the “Import” button. If errors or warnings are found, they are listed in a Log file - review by pressing “View Log” button. When errors are found, data will not be created in the output file. In this case, review the errors listed in the Log File, edit the raw file to make necessary corrections and re-import. The end of the Log file will list any converted data up to the first error, which may be helpful in finding problems.

When browsing for the output file, you can press one of two buttons. The standard “Browse” button opens the output file dialog in the same directory as the raw field file and offers the same file name as the raw field file, but with a “dat” extension. Of course you can modify the offered name to whatever you wish to use. The smaller “<” button opens the output file dialog in the same directory already shown in the field to the left – useful when you’ve stored output in a different directory during the previous run, and you want to output to that directory again.

The “View” button, next to each of the input and output file fields, brings up an editor. So besides viewing the file, you can also edit it. By default, the editor assigned is Windows “Notepad,” but just as in the STAR*NET program, you can set an editor of your choice by pressing the “Set Viewer” button and browsing for the editor program you prefer.

Selecting Processing Options

- **Output as 2D Data** – By default, STAR*NET data is created in a 3D output format. STAR*NET can handle 3D formatted data in both 2D and 3D adjustments. However if you have projects that are 2D and you prefer to have data immediately converted to simple 2D format by reducing slope distances and zenith observations to horizontal distances, you can select this option.
- **Create SS Lines from Single Face Foresights** – By default, foresight observations are created as standard “M” measurement lines. Setting this option causes single face foresight observations to be created as “SS” sideshot lines. Sideshots are normally non-redundant topo or detail shots. If you select this option and some of the SS lines created are in fact redundant observations, these data lines must be edited before running your adjustment!
- **Change Dash Station Separator to –** By default, the dash (i.e. 121-120-122) is used for station name separators. If some of your station names already contain dashes and you wish to keep them, this option allows you to change the output separator to some other character.

- Include SDR Notes – Causes all SDR notes to be included in the output data file.
- Angle Data Station Order – This is simply an output preference. Some surveyors prefer to see angular observations shown as At-From-To, others as From-At-To.
- Tolerance Check – You can request that the program check observations in a set for how much each deviates from the average in the set. Tolerances can be checked for horizontal pointings, vertical pointings and distances. You can enter a standard error for each data type and a sigma value. (1 sigma is approximately 68% confidence, 2 sigma 95%, etc.) So for example, if you set a horizontal pointing of 5 seconds and a N-Sigma value of 2, warnings will be posted in the Log File when any horizontal pointing observation in a set deviates more than 10 seconds (i.e. 5 seconds x 2 sigma) from the average of the pointings. Set the N-Sigma value to 1 if you want deviations simply checked against the tolerance values entered.

Notes on Input and Output

The program assumes that raw field files have an “SDR” or “RAW” extension. If you have a field file with a different extension, choose “All Files (*.*)” from the “File of type” field in the file selection dialog and then select the particular file you wish to convert from the complete list.

Stored Points found in the SDR field file are copied into the data file as comments. To use one of these points as a control point in the STAR*NET data, simply uncomment the data line and edit-in the appropriate fixity codes. Example:

```
C 25 10000.000 10000.000 500.000 ! ! !
```

The output data file created by this routine can be moved (using Windows Explorer) into your project directory for use by STAR*NET. The entire data file can be added to the project using the “Input Data Files” dialog (see the STAR*NET manual), or by using a text editor you can copy and paste parts of the file contents into a data file that already exists as part of your STAR*NET project.

All fields and option settings shown on the STAR*SDR dialog are stored in the registry when you close the program and are restored the next time you run the program.

The “Log File” is an important file that is created during a run. It lists errors and warnings, tolerance checking output and a log of all raw data read. The log file is stored as a temporary file and is available only during the current session. To keep a permanent record of it, you can print it during the session, cut/paste to another file, or “Store as” another file.

Notes on How the Program Processes the Field File

- The “DAT” file created for STAR*NET contains observations extracted from the raw file. All observations collected in “sets” are averaged, and if indicated in the raw data file, corrections are applied for temperature/pressure and prism constant. These corrections are often required when older instruments are used. Newer systems (i.e. the SDR33) usually handle these corrections internally. In addition, corrections are applied for EDM offset, prism offset and collimation if values for these corrections are present in the raw file.
- It is your responsibility to edit the raw file to remove or correct known bad information. The program does, however, respect the “Bad Set Marker” available in SDR33 files, and will automatically remove those observations.
- In the raw field file, blank lines and lines beginning with the “#” character are ignored. You can edit the raw file and prefix any line with a “#” character rather than deleting the line.
- The program also supports “.DATA ON” and “.DATA OFF” inline options as in several other STAR*NET conversion utilities. To cause parts of the raw field file data to be ignored, insert a “.DATA OFF” line beginning at the place you want data to start being ignored and then a “.DATA ON” where you want data to be again used.
- Note that at the beginning of the STAR*NET data file created by the utility program, several inline option lines are created. For example:

```
.Units FeetInt DMS
.Order AtFromTo
.Sep -
.Delta Off
.3D
```

Some of these lines define information such as linear or angular units found in the raw field file header data. Other inlines may indicate processing options set in this conversion program. These inline options precede data they define therefore making it possible to combine data having different characteristics in a single project. With these inlines present, STAR*NET properly interprets the data lines as they are being read.

Example Input Field File

The following is the beginning of the sample TestSDR.raw field file supplied with the program. You can use this file as input to make a test run with the STAR*SDR converter utility.

```
00NMSDR20      V03-05      Nov-17-99 09:30 122211
10NML1790 TRAV 2
13CPSea level crn: N
13CPC and R crn: Y
13CPAtmos crn: Y
06NML.00000000
13OOBS
13TSNov-16-94 08:21
13NMYAKIMA GATEWAY
13NMTRAVERSE LOOP THROUGH ALL WORK POINTS
13CJPoint taken from GATEWAY CONTROL
08KI001964147.320043732.69001068.08000CP 19
01NMOD15S      055538THEOMAT      31425611      0.00000000
13PCP.C. mm Applied: 0.000
02SC001964147.320043732.69001068.080005.63000000CP 19
13PTAtmos crn Applied: Press= 28.3 Temp= 35.00
13CJPoint taken from GATEWAY CONTROL
08KI002263893.630044327.31001081.18000CP 22
13SCSet #: 1 Stn: 0019 Point count: 3
03NM5.77000000
09F100190022646.59147988.8247222359.999722CP 22
03NM5.44000000
09F100190017875.94200492.0250000220.608055CP 17
03NM4.25000000
09F100190029816.10186791.8061111229.492222CP 29
13SCSet #: 2 Stn: 0019 Point count: 3
03NM5.77000000
09F100190022646.59147988.8247222359.998333CP 22
03NM5.44000000
09F100190017875.94200492.0241666220.608055CP 17
03NM4.25000000
09F100190029816.11186791.8058333229.492500CP 29
13SCSet #: 3 Stn: 0019 Point count: 3
03NM5.77000000
09F100190022646.58147988.8252777359.998333CP 22
03NM5.44000000
09F100190017875.94200492.0241666220.607222CP 17
03NM4.25000000
09F100190029816.11186791.8050000229.492500CP 29
13SCSet #: 4 Stn: 0019 Point count: 3
03NM5.77000000
09F100190022646.58147988.8252777359.997777CP 22
03NM5.44000000
09F100190017875.94200492.0238888220.607500CP 17
```

```

03NM4.25000000
09F100190029816.11186791.8061111229.492500CP 29
12SC0019003
13SCThe following MCs are derived from set(s) 1, 2, 3, 4.
09MC00190022646.58362488.8366409113.105142CP 22
09MC00190017875.93531392.0108526333.714308CP 17
09MC00190029816.06704791.7079606342.599031CP 29
07SC00190022113.105142359.997777
02SC001764932.197443345.02331037.344495.44000000CP 17
13SCSet #: 1 Stn: 0017 Point count: 2
03NM5.63000000
09F100170019875.94200487.97527770.00000000CP 19
etc...

```

Example Output File

The following is a portion of the resulting TestSDR.dat output data file in STAR*NET format.

```

# STAR*SDR Version 7.2.2
# Copyright 2012 MicroSurvey Software Inc.

# Input Field File : C:\RawData\TestSDR.raw
# Date Processed   : 04-30-2003 11:17:50

# Job ID: L1790 TRAV 2

.Units  FeetInt DMS
.Order  AtFromTo
.Sep    -
.Delta  Off
.3D

#C  19                64147.32000    43732.69000    1068.08000 'CP 19
#C  22                63893.63000    44327.31000    1081.18000 'CP 22


DV 19-22                646.5865    88-49-30.00    5.630/5.770 'CP 22
M  19-22-17            220-36-33.00    875.9420    92-01-27.50    5.630/5.440 'CP 17
M  19-22-29            229-29-38.00    816.1094    91-48-20.75    5.630/4.250 'CP 29


DV 17-19                875.9370    87-58-30.75    5.440/5.630 'CP 19
M  17-19-30            127-42-41.50    723.4417    89-41-35.75    5.440/5.540 'CP 30


DV 30-17                723.4417    90-18-22.00    5.540/5.440 'CP 17
M  30-17-8             191-02-28.25    604.3789    88-41-56.25    5.540/5.680 'CP 8


DV 8-30                 604.3714    91-18-04.50    5.680/5.540 'CP 30
M  8-30-9              268-39-18.75    240.4756    92-18-57.00    5.680/5.690 'CP 9
M  8-30-7              137-09-41.00    500.4686    89-52-09.25    5.680/5.000 'CP 7
M  8-30-27             64-40-35.25    496.9311    90-09-00.50    5.680/5.240 'CP 27


DV 27-8                 496.9311    89-50-59.50    5.240/5.680 'CP 8
M  27-8-40             164-22-48.00    351.6183    90-05-05.00    5.240/5.690 'CP 40


DV 40-27                351.6235    89-51-36.25    5.940/5.830 'CP 27
M  40-27-32            229-33-32.75    678.8395    90-11-17.00    5.940/5.750 'CP 32


DV 32-40                678.8420    89-48-45.75    5.750/5.940 'CP 40
M  32-40-15            69-39-00.00    466.1314    90-28-19.75    5.750/5.610 'CP 15

```

DV 15-32		466.1364	89-31-44.00	5.610/5.750	'CP 32
M 15-32-3	170-17-25.00	860.6226	90-20-17.50	5.610/5.610	'CP 3
M 15-32-34	335-13-03.50	652.6769	89-41-49.50	5.610/5.000	'CP 34
DV 15-32		466.1314	89-31-42.00	5.610/5.750	'CP 32
M 15-32-3	170-17-28.00	860.6226	90-20-21.00	5.610/5.610	'CP 3
DV 3-15		860.6230	89-39-45.75	5.610/5.610	'CP 15
M 3-15-31	205-12-12.25	372.2438	92-06-34.00	5.610/0.170	'CP 31
M 3-15-4	173-37-45.00	607.4096	88-36-10.50	5.610/5.760	'CP 4
DV 4-3		607.4165	91-23-54.75	5.760/5.610	'CP 3
M 4-3-35	243-21-31.75	389.1509	90-45-17.25	5.760/5.750	'CP 35
etc...					